

**United States Department of the Interior  
National Park Service**

## National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting property groups relating to one or several historic contexts. See instructions in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Complete each item by entering the requested information.

  X   New Submission            Amended Submission

### A. Name of Multiple Property Listing

Wrecks and Submerged Cultural Resources of Lake Minnetonka, Minnesota (BC 9500 - AD 1965)

### B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Pre-Contact Period (BC 9500-AD 1650)  
Contact Period (AD 1650 to 1837)  
Post Contact Period (AD 1837-1965)

### C. Form Prepared by

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### D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

\_\_\_\_\_  
Signature of certifying official

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Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
State or Federal Agency or Tribal government

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

\_\_\_\_\_  
Signature of the Keeper

\_\_\_\_\_  
Date of Action

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Wrecks and Submerged Cultural Resources of Lake Minnetonka, Minnesota (BC 9500 - AD 1965)

Minnesota

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### INTRODUCTION

Lake Minnetonka is over 14,000 acres in size and is located west of Minneapolis in Hennepin and Carver Counties in Minnesota. The lake is comprised of a series of bays opening onto large open areas that are connected by narrows or channels, split into the 'Lower Lake' to the east and 'Upper Lake' to the west. The Lower Lake has one large island, Big Island, plus the smaller islands of Spirit, Lighthouse, Frog, Duck, and Mahpiyata. Upper Lake contains the large islands of Phelps and Enchanted, along with the smaller islands of Shady, Crane, Eagle, Wawatasso, Spray, Goose, Pelican, and Deering. The 14 communities and towns located on the lake are: Victoria, Minnetrista, Mound, Spring Park, Shorewood, Orono, Minnetonka Beach, Tonka Bay, Excelsior, Greenwood, Deephaven, Woodland, Wayzata, and Minnetonka. On the western end of Grays Bay, Lake Minnetonka drains into Minnehaha Creek, a waterway that flows through Hennepin County's western communities into Minneapolis. The creek is navigable by canoe for 22 miles from Lake Minnetonka to Minnehaha Falls, which is located 1/2 mile from the Mississippi River where the creek empties into the major waterway.

### PRE-CONTACT PERIOD (BC 9500-AD 1650)

The Pre-Contact Period in the Lake Minnetonka area encompasses the Paleoindian, Archaic, and Woodland traditions. Minnesota's Paleoindian Tradition (BC 9500-6000) is characterized by the presence of Clovis and Folsom projectile points and is not presently represented archaeologically on Lake Minnetonka. However, the potential for discovering Paleoindian watercraft such as dugout canoes created using bifacially worked choppers and scrapers from this time period is possible owing to lower lake levels as the area was drying out with the warmer post-glaciation climate. A canoe might have been abandoned on a lakeshore that is now buried and submerged in deeper water. The Archaic Period (BC 6000-800) is typified by a change in stone tool production, including those types used for working wood, as well as the development of copper tool fabrication (Johnson 1988, 6, 10) and the Late Archaic Period is represented on Lake Minnetonka in a terrestrial context (Nienow 2004, 40). The Woodland Period (BC 800-AD 1650) is distinguished by the first pottery production, the construction of earthen mound-type graves, and the development of horticulture (Arzigian and Stevenson 2003, 79). The Lake Minnetonka area was occupied by seasonally sedentary groups of Native Americans throughout the Woodland Period. A group of terrestrial archaeological habitation sites on Lake Minnetonka dating to the Middle to Late Woodland Periods are located on the Halsted Bay Peninsula on the Upper Lake's southwestern shore. A series of archaeological investigations from 1991 to 2014 indicates that this area was occupied from the Middle to Late Woodland Periods. At these sites (21-HE-209 to 21-HE-213), Lake Minnetonka was exploited for food collection and the near-by thick forests were used for hunting. Specimens of squash, corn, and wild rice have been identified, as well as fish, turtle, bird, muskrat, beaver, and deer. Radiocarbon dating of maize and charred wood samples and ceramic studies indicate probable occupation dates of BC 200-AD 1100, with one sample dating to the Late Archaic to Early Woodland Period (BC 980-830) deemed unreliable (Terrell 2015, III, X, 5, 23, 42, 187-192, 202-203).

On the other side of Lake Minnetonka, at the northeast corner of the Lower Lake on Grays Bay, another habitation site has been documented (21-HE-353). Evidence excavated and analyzed at this site suggests seasonal occupation for the purposes of wild rice harvesting and the production of stone tools, as evidenced by a large amount of lithic debris. The site appeared to be repeatedly inhabited throughout the Middle to Late Woodland Periods between BC 200 and AD 1400 and possibly into the proto-historic period between AD 1400-1700 (Kloss 2005; Terrell 2015, 45). Another small Woodland Period habitation site (21-HE-94) documented on Big Island in Lower Lake Minnetonka was comprised of a midden associated with Mound Group No. 6 (Arzigian and Stevenson 2003, 401; University of Minnesota 1992).

Mound burials are the predominate Woodland Period terrestrial archaeological sites located at Lake Minnetonka. Discovered singly and in small and large groups, Woodland burial mounds are found along all of

Upper and Lower Lake Minnetonka's shoreline. Significantly for this MPDF, mounds exist on Gale and Big Island (as mentioned above) in the Lower Lake and Phelps and Wawatasso Islands in the Upper Lake. Phelps Island is significantly closer to the lake's shoreline than the others and may have been accessible during the Woodland Period without a watercraft, particularly during low water drought conditions. However, Wawatasso, Gale, and Big Islands would only been accessible by crossing the lake on winter ice or by canoe. With these sites recognized, along with the abundance of timber that was available around the lake, and one Woodland dugout canoe so far identified, it is evident that type was used on the lake throughout the Woodland Period. The Late Woodland Period occupants of Minnesota, including the area around Lake Minnetonka, have archaeological and linguistic links to the later residents of the region, the Dakota. Archaeological evidence of the ancestral Dakota culture has been identified at Late Woodland Period sites in central Minnesota and after AD 1500, dialects of the Dakota language emerged (Gibbon 2003, 30-31).

### **Associated Property Types**

One Lake Minnetonka watercraft is known from the Pre-Contact Period, a Late Woodland dugout canoe dated to AD 1025-1165 through radiocarbon testing (Merriman and Olson 2014a, 12). There are no other artifacts associated with the canoe so it is unknown which recognized cultural group (Central Minnesota Transitional Woodland Complex: Middle to Late Woodland in Central Minnesota, AD 300-1100, or the Blackduck-Kathio Complex: Late Woodland in Northern and Central Minnesota, AD 600-1100, Arzigian 2008, 1, 206, 209) created and used the artifact. The dugout canoe was found in the North Arm of the Upper Lake:

#### **Lake Minnetonka North Arm Dugout Canoe (21-HE-438)**

During low water conditions due to a severe drought in late August 1934 Helmer Gunnarson and his brother Arthur, sons of Gustave A. Gunnarson, discovered the Lake Minnetonka North Arm Dugout Canoe (LMNADC) in Orono, Hennepin County. Throughout the summer, the Gunnarson family had to construct extensions to their dock as the water continually receded from the normal shoreline. At that time the lake was just over seven feet below its ordinary high water level. Helmer and Arthur had sunk several dock pilings but one hit an obstruction 10-12 inches below the silt. Thinking they had hit a log, they exposed the object and dragged it onto the shoreline where they determined it was a dugout canoe. Helmer and Arthur observed that the canoe "had been maintained in an excellent state of preservation as a result of having been imbedded in earth and completely covered by several feet of water over an extended period of time". The Gunnarsons gave the LMNADC to the Minnesota Archaeological Society (MAS) and at their October 1934 meeting, the LMNADC was the "main subject for discussion". The society loaned the artifact for exhibit to the Minneapolis Institute of Arts in late 1934, the LMNADC was shown in the MAS display within the Walker Art Gallery thereafter, and it was on exhibit at the Minneapolis Public Library until 1961. The Western Hennepin County Pioneer Association (WHCPA) acquired the LMNADC in 1961 from the MAS. In its current condition the artifact is 11.10 feet long, 1.40 feet wide, and its depth of hold is .55 feet deep. The artifact's sides have deteriorated and the original height of the vessel to its gunwales is unknown. When the canoe initially left Lake Minnetonka, the ends were more intact when compared to its current condition. Using the photographic evidence as a guide, at least one end of the LMNADC was pointed. Radiocarbon dating using Accelerated Mass Spectrometry has determined that the LMNADC dates to AD 1025-1165 (930±30 BP). Dr. Ron Schirmer has determined the canoe was fashioned out of a white oak tree (Gunnarson and Gunnarson 1966; Merriman and Olson 2014a, 9-12; Minneapolis Institute of Arts 1934, 1; Morrow 2001, 5-6; Sackett 1936, 8; Dr. Ron Schirmer personal communication, 16 January 2015; *Weekly Valley Herald* 1934).

Two other Woodland Period dugout canoes are known, the Big Swan Dugout Canoe (AD 1039-1210, 21-ME-37) from Meeker County and the Chippewa River Dugout Canoe (AD 1436-1522) from Chippewa County (Merriman and Olson 2014a, 13-16). The existence of these artifacts suggests the widespread use of dugout canoes in Central Minnesota during this time. Other Pre-Contact Period dugout canoe sites may lie in Lake Minnetonka beneath the bottom silt.

## CONTACT PERIOD (AD 1650-1837)

### Introduction

Minnesota's early Contact Period began in the mid-17<sup>th</sup> century, with diplomatic relationships between the French, the Dakota, and other regional tribes. The focus of early contact was the establishment of fur trade relationships and exploration. In 1660, for example, two French explorers joined the Dakota for a bison hunt, probably on the west central Minnesota prairie. In 1680 Louis Hennepin provided descriptions of interactions with Dakota groups on Lake Pepin, the Mississippi River above and below St. Anthony Falls, and Lake Mille Lacs. Of particular interest for this MPDF is the use of dozens of birch bark canoes by the European travelers and the Dakota they encountered, as well as accounts of wild rice collection, the small and large game available in the area, and the abundance of bison (Anfinson 1987, 16-18; Hennepin 1880, 198-205).

### Native American

During the early Contact Period, Native American birch bark canoe use was detailed on the Mississippi River in the early 1680s. During the Late Contact Period at Traverse des Sioux on the Minnesota River, Native American canoe construction was noted, probably a birch bark vessel described as a "small boat". A Native American dugout canoe was described as "a wooden one made of a tree trunk. It was 30 or 35 feet long and from 1/2 to 2 broad" (Arese 1934, 118; Hennepin 1880, 205; Merriman and Olson 2014a, 3-4). Lake Minnetonka was only known to Native Americans during the Contact Period, resulting in no first-person accounts of Dakota using dugout or bark canoes on the Lake during this time. However, archaeological evidence in the form of five dugout canoes that date to the Late Pre-Contact through the Contact Period and into the Early Pre-Contact Period have been identified from Chippewa County, Blue Earth County, Aitkin County, Dodge/Steele County, and Hennepin County, the geographical location of the majority of Lake Minnetonka. There is potential for the identification of Contact Period dugout and birch bark canoe wrecks or submerged cultural resources on the bottom of Lake Minnetonka.

### Euro-American

In May 1822, 17 year-olds Will Snelling and soldier Joe Brown along with two other soldiers "explored the rivulet that supplies the cascade of Minne-HaHa, as far as Lake Minne Tonka" in 1822 (Neill 1858, 331; Upham 1920, 67, 224, 230). This small expedition was comprised of the first non-indigenous people to see the lake. A contemporary report of this trek is vague, but Minnehaha Creek and Lake Minnetonka are briefly described:

The country about the fort [Snelling] contains several other waterfalls....One of them, which is but two miles and a half from the garrison...is very interesting. It is known by the name of Brown's Fall...The stream that exhibits this cascade [Minnehaha Falls] falls into the Mississippi about two miles above the fort; it issues from a lake situated a few miles above, A body of water, which is not represented upon any map that we know of, has been discovered in this vicinity within a few years, and has received the name of Lake Calhoun, in honour of the Secretary at War. Its dimensions are small. Another lake of a much larger size is said to have been discovered about thirty or forty miles to the north-west of the fort. Its size, which is variously stated, is by some supposed to be equal to that of Lake Champlain, which, however, from the nature of the country, and the knowledge which we have of the course of the rivers, appears scarcely possible (Keating 1825, 314-315).

Lake Minnetonka is not as large as Lake Champlain, but Keating too readily dismissed the possibility of a large lake existing in the area to the northwest of Fort Snelling. Beyond this visit, Lake Minnetonka remained unknown to European Americans, even after Jean Nicollet combined the data he collected between 1836-1840 during five expeditions to survey the region. His explorations went to the headwaters of the Mississippi River, along the St. Louis River to Lake Superior, down the St. Croix River and then Minnesota River to Pipestone, and into South and North Dakota (Neill 1858, 417-420). Nicollet's map records Minnehaha Creek, marked as Brown's Creek, to where Lakes Harriet, Calhoun, and Lake of the Isles drain into it; like Keating, Nicollet dismissed the 'rumor' of a large body of water to the northwest of Fort Snelling. Because of this attitude, there will be no European American Contact Period wrecks or submerged resources discovered on the bottom of Lake Minnetonka.

## POST-CONTACT PERIOD (AD 1837-1945)

In the early 1850s, a description of Native American canoe making was discussed within the context of their creation as art. The process of birch bark canoe construction was detailed step by step, and the people who made them were described as skilled with good taste. To contrast, dugout canoes were given hardly a mention and were characterized as "ordinary...made from the entire trunk". The ability to create elegant lightweight structures such as birch bark canoes was attributed only to the Algonquian tribes of the north and east, whereas the construction of dugout canoes was assigned only to the "southerly and westerly tribes" (Schoolcraft 1852, 511-513, Pl. 72.5). This assertion is incorrect, since birch bark canoe making was known to the southern Minnesota tribes by the 1830s (see Arese above) and probably earlier, with dugout canoe construction simply being an older tradition of craft building or utilized by less-skilled craftsmen. However, birch bark canoes were utilized by northern tribes and French traders in Minnesota and Canada by the late 1600s (Wheeler et al 1975, 2-4; Merriman and Olson 2014a, 5).

Santee Dakota physician and author Charles Eastman (Ohiyesa) contended that Native Americans constructed dugout canoes when birch bark was not readily available. A suitable tree to fell would be chosen carefully, with soft maple, basswood, and cottonwood being the most appropriate to create a craft 12-16 feet long. During the prehistoric period the bulk of the inside of the trunk would be burned out to remove the majority of the wood and then finished with stone tools. The outside of the hull would have been smoothed with bone knives or sharp shells. With the introduction of metal tools in the historic period, the tree trunk would be smoothed on the outside into a boat shape and athwartships cuts were made about one foot apart down the length of the log. The wood between these cuts would be split longitudinally and removed, and then hollowed out more with a pickaxe and smoothed by a chisel. Eastman described the thickness of the dugout canoes hull to be four to six inches and determined that knives smoothed the outer hull. Although not mandatory, fire was sometimes used to dry the hull and polish it. Eastman held that many Native Americans preferred dugouts to birch bark canoes because they believed them to be faster, more durable, and in the historic period they were easier to make due to the availability of better tools. Eastman believed that "the forest Indian alone still clung to the bark canoe". Finally, Eastman stressed one aspect of using dugout canoes – they were not intended for use by the novice. He contended dugouts were "very graceful in the hands of an expert Indian canoeist" (Eastman 1914, 49-51; Merriman and Olson 2014a, 5).

The 1851 Treaties of Traverse des Sioux and Mendota opened the Lake Minnetonka area to European settlement and Minnetonka Mills was established in 1852 at the source of Minnehaha Creek, at the northeast corner of Lake Minnetonka now known as Grays Bay. In April 1852, Lower Lake Minnetonka was explored and described by Simon Stevens and Calvin A. Tuttle. These men:

set out...to search for a large body of water west of the village; they had learned from Philander Prescott, the Indian interpreter at Fort Snelling, that the Indians told of a 'big water', towards the setting sun, in the big woods...Stevens and Tuttle supposed the lake they were in search of to be distant two or three days journey. A little before noon, of the first day, they came to a clear, swift-running stream, which they surmised was the outlet of the lake there were seeking. Following the course of the stream, on its north bank, about one o'clock in the afternoon, they reached the bay, now called Gray's Lake where they cooked and ate dinner. After dinner, still uncertain whether they had found the 'big water', they pushed on, westerly, and came to Wayzata Bay, thence across the ice which was about three feet thick past Breezy Point, to Big Island, where they camped for the night (Atwater and Stevens 1895, 1448-1450).

Upon returning from Lake Minnetonka, Tuttle and Stevens referred to it as "Peninsula Lake". It was accurately claimed "almost the entire shore appears to be a succession of bays and peninsulas" (Upham 1920, 224).

A few weeks later, in May 1852, Minnesota's territorial Governor Alexander Ramsey toured the Lake Minnetonka area and was credited with naming it using the Dakota words that meant "big" and "water" – Minne and Tonka. The Office of the Surveyor General documented Lake Minnetonka in October 1853 and November 1854. The Minnetonka Mills sawmill on Minnehaha Creek was constructed, and the town of Excelsior on the south shore of the Lower Lake, were established in 1853. Wayzata, on the north shore of the Lower Lake, was

founded in 1854 (Dunwiddie 1975, 172; Original Land Survey Maps of Minnesota Collection 1854; Upham 1920, 221, 224, 227).

A visitor in mid-July 1855 described Lake Minnetonka:

Tuesday morning 10th I took stage for Minnetonka Mills (12 miles S.W. from Minneapolis), on the outlet of Lake Minnetonka. On the way passed a number of beautiful little lakes in Prairie & Timber. At Minnetonka Mill found a first rate Sail boat, and took passage 2 miles up the outlet to the large lake, and thus up the Lake stopping at Wayzata to Excelsior 12 or 15 miles. I believe it is the most beautiful sheet of water I was ever on; the water is clear as crystal, pure as the purest spring, full of fish too. It is beautiful with coves & points mixed up with Islands everywhere. In fact in this region the land is about half water, & the water about half land. Unlike the Lakes in Maine, the land here all around these lakes is very fertile, mostly well wooded, very little rocks anywhere. You can see but a few miles of water anywhere, but the lake is at least 30 or 40 miles long (probably has never been fully explored), and connected on all hands with other lakes. Minnetonka will sometime be a great place of resort, with fine Steamboats & Hotels. Excelsior on South Shore of Lake where I stopped was settled last year by a New York Colony, town laid out & c. Bid fair to be a fine place, good society, families of education & refinement. Both Pianos and Bloomer dresses are plenty and both look well away there in the woods. Yesterday 11th, After a fine swim in the Lake, I started back for St. Paul 33 miles in a Lumber Wagon (Metcalf 1855).

A woman claiming to be the first European American child born in Hennepin County, on Upper Lake Minnetonka in September 1855, wrote:

Father took up a piece of land built him a log house and moved in. and there on the banks of the North Arm of Lake Minnetonka in a little log hut on a one legged [sic] bedstead on Sept 11th 1855 I was born. Mother had no Dr only a Midwife or any white Neighbors only as they took a boat and went across the Lake. there [sic] we lived for nearly 2 years, Among the Indians. They were very kind hearted, generous, always honorable...My Parents treated them with much respect always dividing with them when they came. they [sic] had their trail between the house and Lake and could be seen quite often in the Canoes on the Lake. there [sic] Mother sat with her new born Babe and watched Father chop and clear a small piece of land (Brown 1926, 2-3).

Brown must have received this information from her parents due to her age, but the simple mention of a Post-Contact Native American canoe traveling on North Arm is valuable to place Lake Minnetonka's watercraft in context. Whether the canoe was a dugout or made of bark, is unknown. Metcalf's description of the wildness of Lake Minnetonka is valuable considering the physical changes to the environment that he predicted, and were going to begin soon.

The release of the US government's comprehensive 1853-1854 land survey in 1856 focused interest on the settlement of Lake Minnetonka by European Americans. Access to this survey, its information, and its maps provided accurate geographic information about Upper and Lower Lake Minnetonka for the first time. Newspapers began reporting on Lake Minnetonka commercial and agricultural activities and opportunities, providing insight into early Post-Contact geographic details that have changed or no longer exist. For example, "Cottage Island" was described in 1856 as being formerly called Meeker's Island, a change that occurred very early in Lake Minnetonka's Post-Contact history, and now known as Big Island. It was reported that the name change to Cottage Island came about due to the Native American cottages that occupied it. These structures were described: "There are upon it numerous Indian cottages- not the common tepees made of poles and covered with skins and canvas, but houses built of timber, and in addition a large fort made of logs, enclosing nearly an acre, a relic of some contest between the Dacotah and Ojibwa tribes, doubtless". This early newspaper account, in referring to Hennepin County, claimed "no other county offers greater inducements to the farmer, the mechanics, or the tradesman. Builders, cabinet-makers, carriage, wagon and plow makers, are in great demand, and excellent workmen need have no hesitation in emigrating to Hennepin county, Minnesota Territory" (*Northwestern Democrat* 1856). To date no Post-Contact or Contact Period Native American lodges have been located on Big Island, but evidence of them may still be found.



## ***Railroads & Agricultural Development (1867-1940)***

The St. Paul and Pacific and Railway Company (SP&P) extended its mainline west from St. Paul to Wayzata on Lower Lake Minnetonka's northwest shore in August 1867. In 1875 James J. Hill and George Acker formed Hill and Acker of St. Paul, a fuel company that exploited the transportation by rail of coal and where it concerns Lake Minnetonka, wood. Hill and Acker also partnered with John A. Armstrong out of Minneapolis. Hill and Acker contracted with "choppers" on Lake Minnetonka and beyond, into the geographic area known as "The Big Woods", while Armstrong exploited timber stands closer to Minneapolis, between Minneapolis and Delano. Hill personally headed west out of St. Paul in January 1876 to Howard Lake, where his representative William Marsh was contracting to purchase cordwood with a \$400 advance from Hill. Hill also traveled to Wayzata on Lake Minnetonka to secure the purchase of about 3,000 cords of wood 'banked' on the shores of the lake, ready for removal in the Spring from the Upper and Lower Lakes (Hill 1876; Hill and Acker 1875a; Hill and Acker 1875b; Schmidt and Pratt et al 2012, 85-87).

The great amount of timber being cut in the Lake Minnetonka area prompted Hill and Acker to construct a tug boat and barges to transport the cut wood from around the lake to Wayzata in 1876 (Hill 1876; Hill and Acker 1876a-1876i). In June 1879 the SP&P was incorporated into the St. Paul, Minneapolis and Manitoba Railway Company (SPM&M), partially owned by Hill. The Lake Junction line from Wayzata to Spring Park, following the northern shoreline of Lake Minnetonka, was constructed in 1881, initially for the movement of freight. However, the addition of passenger service in the late 1880s allowed the line to prosper due to the swell in the number of large tourist hotels constructed (Schmidt and Pratt et al 2012, 93-94). By the 1880s, the deforestation of the Lake Minnetonka area and The Big Woods was nearly complete, prompting land use for agriculture and an increased number of lake homes and cottages.

### **Associated Property Types**

One wreck has been identified that is associated with the transportation system linked to Lake Minnetonka's railroad service:

#### **1876 Wayzata Bay Wreck (21-HE-401)**

The Wayzata Bay Wreck is a rare and well-preserved model barge that is 85.00 feet long and is 18.50 feet in the beam. A model barge is an un-powered vessel that has two pointed (sharp) ends, making her double-ended. She is sturdily built, with distinct scarfs in her gunwale at different points, has an intact deck, substantial wooden cleats, deck hatches, large H-bitts on both ends, and distinct stem/stern posts. The Wayzata Bay Wreck sank on September 30, 1879: "Monday night's storm was a lively on at Lake Minnetonka. A barge was sunk and a small steamer was capsized near Wayzata" and "the storm last night proved a regular screamer at Lake Minnetonka. The wind held high frolic, and succeeded in tipping over a small steamer anchored near the Wayzata shore, and sinking a barge". The Wayzata Bay Wreck was part of the barge fleet owned by the fuel company of Hill & Acker, and was constructed in 1876. This model barge was utilized to haul cordwood and ties from Upper and Lower Lake Minnetonka communities to Wayzata. The cordwood was then transferred to railroad cars for delivery to sites where it could be utilized as steam train fuel. Wood ties were loaded on the rail cars for delivery to railroad extension sites. The deforestation of Lake Minnetonka increased available agricultural land and building construction sites. The Wayzata Bay Wreck represents a one-of-a-kind nautical archaeological site in Minnesota, one of only three model barge wrecks in the United States, and the best-preserved wreck of her type known (Merriman and Olson 2013a, 7-11, 2015 4-5; *Minneapolis Tribune* 1879; Stewart-Abernathy 2002, 172-174; Saltus and Stewart-Abernathy 2002, 102-118; Stewart-Abernathy and Saltus 2002, 139, 141; *St. Paul Globe* 1879).

The potential to locate more wrecks associated with Lake Minnetonka's Railroad and Agricultural development is good.

## ***Tourism & Recreation (1860-1965)***

### **Boat Building**

By 1860, the Lake Minnetonka area had been claimed by European Americans and developed to the point where businessman Charles Galpin commissioned the construction of the first steamboat on the lakeshore, the sidehweeler *Governor Ramsey*. Galpin informed Governor Ramsey in St. Paul about the vessel:

I have been engaged in an enterprise (though on a small scale) to make our Lake a summer watering place. I have built a small steamboat that will carry about a hundred passengers, and I have named it *Gov. Ramsey*. And more my hope is that you will get up a small party at least visit our Lake and it shall be a sufficient present for the name. This you know will help us along by way of popularity & other parties may follow. But I am aware that the general cry is, the times are too hard to spend much in pleasure, but I have tried to remedy this in part by opening my own house to accommodate eight or ten persons at a time, for fifty cents a day (Galpin 1860).

This hand-written letter announced the inception of commercial boat building on Lake Minnetonka, primarily for the purpose of moving visitors around the lake. *Governor Ramsey* made the trip down Minnehaha Creek to Minnetonka Mills, met stage passengers and collected the mail, and then traveled around Lake Minnetonka delivering passengers and freight to their intended destinations. *Governor Ramsey* (later becoming *Excelsior*, *Lady of the Lake*, *Minnetonka*, and finally she was transformed into the unpowered barge *Mermaid* in 1874) remained the only steamer on Lake Minnetonka until the launch *Sue Gardiner* was imported from Detroit by Charles R. Gardiner in 1871 (McGinnis 2010, 95, 238).

However, many steamers, sailboats, and rowboats were designed and constructed on Lake Minnetonka's shores by local independent boatwrights for local transportation, to serve the tourist trade, and recreation. Nathaniel H. Harrison began building boats in 1874, and his constructions included many well-known vessels such as *May Queen* (1874), *Coquette* (1879), and *City of Minneapolis* (1880); he also re-fitted vessels and designed boats for other builders. Maurice J. Godfrey constructed his first Lake Minnetonka vessel in 1879 and established Godfrey's Excelsior Boat Yard in 1885, later becoming M. J. Godfrey & Son, on St. Albans Bay's south shore. Godfrey's enterprise was responsible for *Hattie May/Tonka* (1878), *Breezy Point* (1884), *Nina* (1884), *Minnehaha* (1885), *Mayflower* (1898), *New Acte* (1898), and *George/Excelsior* (1901) with George E. Day. Godfrey also took on jobs to re-build and re-design several steamers. Gustavus V. Johnson was responsible for a number of Lake Minnetonka-constructed boats including *Lillie Reid* (1878), *Elsie* (1879), *Albatross* (1880), *Agnes* (1881), *Susie Belle* (1880-1881), *Dutchy* (1881), *Ariadne* (1882), *Kismet* (1882), *Margaret* (1883), *Rachel Hill* (1883), barge *Priscilla* (1902), and *John Alden* (1905) (McGinnis 2010; *Minneapolis Journal* 1901).

Sawin H. Dyer began building Lake Minnetonka watercraft in 1881 out of Excelsior. He constructed the sailboats *Black Pirate* (1882), *Osprey* (1883), *Wave* (1884), *Lucifer* (1887), *Single Tax* (1893), and *Traveller* (1896), and completely re-built the steamer *Mary* into the vessel *Hiawatha* (1881). S. H. Dyer's partnership with his young son Arthur produced the vessels *Genevieve* (1890), *Snark* (1890), *Hermes* (1891), *Kestrel* (1891), and *King Bird* (1891) before Arthur set out on his own, founding the Dyer Boat Works in 1892. Arthur primarily designed and built fast racing sailboats, but also constructed a few motor launches and even a work dredge as well. Some of his creations include *Advertiser* (1892), *Apukwa* (1893), *Arrow* (1894), *Diamond* (1894), *Cupid* (1893), *Onawa* (1893), *Water Witch* (1893), *Marie* (1894), *Psyche* (1894), *Wasp* (1895), *Rambler* (prior to 1895), *Alcyone* (1896), *Cupid* (1896), *Magic Slipper* (1896), *Papoose* (1896), *Reveille* (1896), *Swift* (1896), *Marie II* (1897), *Gladys* (1899), *Sapphire* (1899), and the *Boardman Dredge* (1907). Dyer's most impressive vessel was the groundbreaking *Onawa*, on display at the Excelsior-Lake Minnetonka Historical Society (ELMHS). *Onawa*'s innovative 'gliding over the water' design, conceived by local 15-year old Ward Burton, broke speed records and influenced yacht construction from that point forward and Dyer received many orders for similar boats from East Coast patrons. Unfortunately for the maritime history of Lake Minnetonka, Dyer Boat Works completely burned in 1910, taking 43 vessels stored there with it – steamers, motor launches, and sailboats among them (McGinnis 2010).

In 1882 John R. Brooks arrived at Lake Minnetonka from the East Coast, where he had designed and built

yachts, and established his boat-building firm at Cedar Point on Wayzata Bay. He was prolific during his 17-year career on Lake Minnetonka and exclusively constructed sailing vessels including *Catherine* (1882), *Curlew* (1886), *Phyllis* (1886), *Atalanta* (1888), *Aurora* (1889), *Aurelia* (1890), *Kelpie* (1890), *Kid* (1890), *Kitten* (1880), *Luella* (1890), *Celia R.* (1891), *Dolphin* (1891), *Selah R.* (1891), *Siren* (1891), *Coquette* (1893), *Daphne* (1893), *Deke* (1893), *Argo* (1894), *Iris* (1894), *Dragon* (1895), and *Answer* (1896). Brooks also designed some of the boats mentioned above, designed boats for other builders, re-built some yachts over the years, and several of the yachts he constructed on the East Coast found their way to Lake Minnetonka (McGinnis 2010).

Gustavus Johnson was in business with Royal C. Moore between 1883 and 1888 under the name Johnson and Moore, producing the *Kansas City* (1883), *Lazy Jane* (1884), *Rosander* (1885), *Woodland* (1885), and *Lizzie Gill* (1886) during their partnership. Royal Moore established the Moore Boat Works and his distinct 'torpedo stern' design that left virtually no wake and reduced drag, was a hallmark of many Moore vessels. Between 1888 and 1912, Moore Boat Works produced dozens of vessels, including *White Wings* (1888), *Winona* (1889), *Zoraya* (1889), *Wacouta* (1890), *Florence I. Wright* (1891), *Oriole* (1891), *Ventura* (1891), *Columbia* (1893), *Mischief* (1893), *Ethel* (1894), *Oswa* (1894), *Thistle* (1894), *Senorita* (1894), *Ypsilanti* (1894), *Gale* (1895), *Orphan* (1895), *Shark II* (1896), *Breeze* (1897), *Demon* (1897), *Gladis* (1897), *Kossack* (1897), *H. C. McLeod* (1898), *Arbors/Green Dragon* (1899), *Dewey* (1899), *Dorothy* (1899), *Emma L.* (1899), *Florence* (1899), *Idylwild* (1899), *Katahdin* (1899), *Okadusa* (1899), *Wa Wa* (1899), *Dunnottar* (1900), *Marietta* (1900), *Algoma* (1901), *Aurelia* (1901), *Rainbow* (1901), *Sans-Souci* (1901), *Tanager* (1902), *Widgeon* (1902), *Winilorah* (1902), *Ito* (1903), *Billy D.* (1902/1903), *Iamokay* (1904), *Bobolink* (1906), *Buttinsky* (1905), *Canihaukee* (1901), *Captain H.* (1901), *Cheemaun* (1901), *Muskegon* (1903), *Helenita* (1905), *Golden Rule* (1905/1908), *Como* (1906), *Harriet* (1906), *Hopkins* (1906), *Minnehaha* (1906), *Stillwater* (1906), *White Bear* (1906), *Katahdin II* (1906), *Sierra-Nevada* (1906), *Isabelle* (1907), *Harriet* (1909), *Manawa* (1909), *Tasmatic* (1909), and *West Arm* (1909). In addition, Moore Boat Works modified, maintained, and fixed several other watercraft through its 24-year existence, as well as constructing dozens of other non-Lake Minnetonka boats. In 1912 a group of Minneapolis business interests associated with the Ramaley Boat Company of White Bear Lake purchased Moore Boat Works and continued operations until 1929 (McGinnis 2010; *Minnetonka Herald* 1954; *Minnetonka Record* 1928; *Wayzata Reporter* 1912).

Thomas H. Wise built boats at Lake Minnetonka beginning in 1886 and by 1902, he established his Wayzata firm, the Wise Boat Works. Examples of Wise boats include the *Ripple* (1889), *Pauline* (1890), *Ino* (1891), *In An' Out* (1892), *Nautilus* (1893), *Omega* (1893), *Violetta* (1894), *White Crow* (1894), *Henry* (1906), and *Swan* (1906), along with several launches for local folks, but the names of these boats are unknown. Andrew B. Peterson arrived in Excelsior in 1893 and between 1894 and 1904, he built boats at the location of the current Excelsior Commons. His vessels included *Dagmar* (1893), *Gypsy* (1895), *Hawk* (1894), *Lorelei* (1894), *Slipener* (1895), *Victoria* (1895), *Beatrice* (1896), *Hurrah* (1896), *Tartar* (1896), *Katrina* (1897), *Pyxie* (1897), *Tonic* (1897), *Wizard* (1897), *Fremad* (1898), *Hazard* (1898), *Moccasin* (1898), *Cherokee* (1899), *Puritan* (1901), *Gopher* (1901), and *Wihnja* (1904). Peterson also designed the steamer *Plymouth* (1903), built by John R. Johnson. Peterson sold his boat yard to his son P. L. Peterson and his partner F. Johns in June 1904 (McGinnis 2010; *Minnetonka Record* 1904). Numerous other boat builders constructed vessels on the shoreline of Lake Minnetonka during the Post-Contact Period and many different sized companies were founded to operate the boats.

The large number of tourists visiting Lake Minnetonka during the latter quarter of the 19th Century particularly impacted the Upper Lake. Many hotels and boarding houses were scattered around the various Upper Lake islands and bays: including the Palmer House at Zumbra Heights, Pleasant View on Howard's Point, the Upper Lake House/Edgewood House on the south shore of the East Upper Lake, Hotel Harrow/Shady Isle House on Shady Isle, the Maple Heights Inn/Woolnough's Inn on Phelps Island, and the Hotel Del Otero in Spring Park. In Mound City itself, the Bartlett House, Mound City House, Dewey House, the Buena Vista Hotel, the Switzerland Hotel, and Sunset View Hotel. Advertisements for these Upper Lake establishments all stressed the fact that they were on the steamboat routes and boat owners published their schedules to the boarding houses and hotels as well (Meyer 1997, 64-73, 100; *Northwestern Tourist* 1883b; *Tourist and Sportsman*

1881).

### **Yacht Clubs**

Not only were the hundreds sailboats constructed on and imported to Lake Minnetonka from the East Coast used for recreational boating, competitive yacht racing developed as well. In early July 1882 during the opening weekend of J. J. Hill's Hotel Lafayette one sailboat race spawned, over the next two months, the Minnetonka Yacht Club (MYC). The inaugural members of the MYC sailed either catboats or sloops that measured between 18 and 23 feet long. The first MYC regatta was held on 15 August 1882, beginning over 130 years of competitive racing. The Excelsior Yacht Club was established in 1883 but by 1889, the two clubs merged into one and a clubhouse was constructed on Lighthouse Island in 1890. By this time, the club had 263 members and 62 boats over four classes: special class (16 feet and under, any rig); catboats (16-23 feet); 2<sup>nd</sup> class sloops (under 21 feet); and 1<sup>st</sup> class sloops (21-23 feet). In 1965, the Wayzata Yacht Club (WYC) was established on the north shore of the bay at the site of the former Wise Boat Works, and a clubhouse was constructed there in 1981 and the nearby marina was acquired in 1985 (Kunz 1982, 12-13, 17, 19, 25, 28-29; McGinnis 2010, 303; Wayzata Yacht Club 2012).

### **Mid-20<sup>th</sup> Century Recreational Boating**

The powerboats of today evolved from the low-horsepower, heavy, and relatively slow steam launches of the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. The development of the gasoline engine in the 1890s meant traditional steam launch hull shapes were inadequate for the greater power offered by these engines. With the rise in popularity of racing competitions powered by boats with gasoline engines during the 1910s and 1920s, pioneering naval architects such as John Hacker and Chris Smith developed vessels with V-bows, hard chines, and flat bottoms that met with little resistance going through the water. This design is common in boat designs of today. During the 1920s the number of privately owned powerboats increased dramatically because they were more and more affordable to average Americans. Though the Depression saw the demise of many small boat-building firms, the post-World War 2 era of prosperity brought with it a new demand for fast powerboats (Merriman and Olson 2013b, 4-5).

By the mid-1950s ownership of personal watercraft by residents around Lake Minnetonka (and in Minnesota in general) was undergoing a surge. In spring 1956, boat yards around Lake Minnetonka – All Sports, Inc., Cochrane's Boat Yard, Minnetonka Boat Works, Richards Marine, and Tonka Bay Boat Works – were bustling with activity. New boat sales, used boat sales, and the 'fitting out' of dry-docked vessels at these busy boating establishments led one of Cochrane's long-time employees to muse "Figure it out yourself. There are...110 miles of shoreline around Minnetonka, and everyone who lives on the shore as well as those half a mile back have boats of some kind. And if they haven't owned them in the past, they're getting them this year". It was estimated that there were more than 500 cruisers in the 18-50 foot range, 600 smaller runabouts, about 100 sailboats, and uncountable rowboats, canoes, skiffs, and flat-bottomed boats on Lake Minnetonka. With these numbers in mind, it is not surprising that the Hennepin County Sheriff teamed up with local residents around Lake Minnetonka to form a Lake Patrol. Hennepin County Sheriff Captain E. R. Wenell recognized that "Lake Minnetonka has been getting to be a bigger and bigger problem every year". The towns and communities around the lake that comprised the 'League of Lake Minnetonka Municipalities' (LLMM), along with the Sheriff's Office, wrote a Uniform Code of Regulations to promote boat safety, educate boaters, halt risky activities that endangered boaters, water skiers, and property, reduce pollution, and mandated the use of boat lights at night. Initially, the Lake Minnetonka Patrol (later the Hennepin County Sheriff's Water Patrol, HCSWP) utilized 21 boats owned by their cadre of 24 trained and deputized volunteers who were recognized by their patrol cap, badge, and the white and blue flags their boats flew that featured a sheriff's star. The lake was partitioned into five zones and each zone had five patrol boats on duty during the weekends and in the evenings beginning in early June 1956. The volunteers carried an array of safety equipment with each patrol boat that would assist them during water rescues and the flotilla shared one two-way radio among them. Early on the Lake Minnetonka Patrol's statistics indicate they were immediately busy giving warnings to boats anchoring without lights or being anchored inside a channel, for reckless boating and speeding, water skiing, tubing, and fishing in channels. The Patrol also rescued people from a sinking boat and responded to reports of drownings, boats stuck on 'reefs', and stolen watercraft and property. The group also cleaned obstructions out of bays and

channels and they located a sunken boat in Carson's Bay. Initially the Lake Patrol did not issue tickets that resulted in monetary fines for violations, but by mid-July, the Patrol issued their first six tickets (Merriman and Olson 2013b, 5; *Minnetonka Herald* 1956a-i).

In late September 1956, the inaugural season of the Lake Patrol was lauded by local and State authorities – including the Governor and Commissioner of Conservation – and its first annual report boasted impressive statistics. In total, 28 boaters were arrested for speeding or water skiing through channels, drunken boating, and 'careless piloting', while 425 warnings were also issued. Further, the Patrol's activities were being extended over the winter due to the availability of equipment appropriate for use on a frozen lake. Throughout the season, the Patrol distributed copies of the Lake Minnetonka safety ordinances to ignorant boat owners as part of their education program and to assist in law enforcement. In the end, 80% of the Patrol's first year violators were boaters who did not live on Lake Minnetonka and after the season the ordinances were going to be more widely distributed. Other Hennepin County patrols had been organized over the summer and efforts also spread to Leech Lake in Cass County and Forest Lake in Washington County. Plans were also in the works for a patrol in Anoka County and on the Mississippi River. In addition to local acknowledgement of the Lake Patrol's success, the organization's efforts were being emulated as far away as Texas and significantly, the FBI published an article about the Patrol's policing (Merriman and Olson 2013b, 6; *Minnetonka Herald* 1956j).

Since 1956, newspapers have reported on the HCSWP's involvement in property theft cases (most often boats and motors), rescue, collision, injury, and sinking incidents, investigations of boat explosions, and comprehensive community-based boat safety programs. From these beginnings, the Lake Minnetonka Patrol served as a template for other counties and the State of Minnesota to develop boat safety programs and increase the enforcement of laws on the State's bodies of water. The establishment of a county-sponsored boat safety and law enforcement unit that was dependent on community involvement for its success set the groundwork for statewide uniformity of boat regulations. It is not an over-statement to suggest that the development, growth, and acceptance of the Lake Minnetonka Patrol's authority – and success – facilitated the creation of the Minnesota Boat and Water Safety Act (MBWSA) of 1959 (Merriman and Olson 2013b, 6).

**Minnesota Boat and Water Safety Act of 1959.** On July 1, 1959 the Minnesota Boat and Water Safety Act (MBWSA) went into effect. On that date, all motorized watercraft were required to display an identification (also called a license or registration) number on both sides of her bow. The original draft document of the 'Small Boat Act' has survived and it is interesting to compare the language produced by the Boat and Water Safety Committee (the group formed to suggest boat regulations in Minnesota) with the actual act passed by the Minnesota Legislature. Further, supporting documentation produced by the State indicates the Lake Minnetonka Patrol was the actual inspiration for statewide regulation and licensure of watercraft. A 1958 brochure from the Department of Conservation and the Boat and Water Safety Committee recognized that the Minnesota Legislature was stalled on action in relation to a comprehensive safety and regulatory act. The Department and the Committee exploited Minnesota's Centennial celebration that year to stress the efforts of the Lake Minnetonka communities and their successful volunteer cooperative in terms of boat safety. The brochure urged volunteer community action that would emulate the Lake Minnetonka Patrol's program – an effort also promoted by the State Sheriff's Association (Department of Conservation 1958). This pressure must have had an effect since the Minnesota Legislature passed the MBWSA soon after. For the identification of Lake Minnetonka wrecks, the most significant section of the law pertains to the mandatory display of a boat's registration number on both sides of the bow (Department of Administration 1959, 947-949, 956-957; Merriman and Olson 2013b, 7-8).

The Boat and Water Safety Committee's suggested language for the new law was more specific and simply expressed with statements like "every motorboat on the waters of this state shall be numbered. No person shall operate or give permission for the operation of any motorboat on such waters unless the motorboat is numbered in accordance with this act". Also clear was the suggestions that each "owner shall paint on or attach to each side of the bow of the motorboat the identification number in such manner as may be prescribed by rules and regulations...in order that it may be clearly visible. The number shall be maintained in legible

condition....No number other than the number awarded to a motorboat or granted reciprocity pursuant to this act shall be painted, attached, or otherwise displayed on either side of the bow of such motorboat" (Committee of State Officials on Suggested Legislation, 1958; Merriman and Olson 2013b, 8).

When the MBWSA went into effect, the Commissioner of the Department of Conservation was responsible for assigning boat identification numbers and maintaining those records through the Minnesota Bureau of Boat and Water Safety (MBBWS). Boat owners were responsible for renewing their licenses and by mid-1964 and the MBBWS was compelled to remind boaters through the media to check their expiration dates. It is interesting that although "current procedure gives boat registrants one full year to renew after license expiration" before a vessel owner would lose their number, "all unused boats must be renewed before December 31, 1964, in order to keep the same number". This grace period gave boat owners an extra year to keep their boat license if they had not, for whatever reason, launched their boat during 1964. In March 1972 the MBWSA was amended to include the licensure of canoes and sailboats in addition to motorized watercraft. In January 2013 the MBWSA was further amended to exempt non-motorized watercraft under 10 feet in length from licensure. In 1971 the Department of Conservation became the Department of Natural Resources (DNR) and from then, the DNR has been responsible for boat licensing in Minnesota. Unfortunately for the maritime history of Minnesota, specific boat registration data from 1959-1972 have not survived (*Deephaven Argus* 1964; Department of Natural Resources 2013, 1; Merriman and Olson 2013b, 8-9; *Mound-West Tonka Minnetonka Sun* 1972).

This lack of historical documentation has often made establishing the sinking dates of more recent wrecks difficult, even in comparison to wrecks that sank 100 years ago. Newspaper and other historical accounts of steamboat and gas launch accidents, explosions, or burnings are rather plentiful and detailed. In contrast, more recent accounts of boat accidents, explosions, and sinkings are often reported by the press, but the pertinent details such as watercraft model and age are not revealed – and many accidents and sinkings went unreported all together. It is suspected that often authorities were not contacted after some incidents if alcohol was involved, boats were operating illegally without lights, or if a watercraft did not meet State standards for safety. Several wrecks have been located that have registration numbers on their bow that are not recorded in the DNR database – meaning they sank between July 1, 1959 and 1972. An argument can be made that a wreck may have had a registration number on her hull but that it has not survived over the decades. However, it has been discovered that even if a vessel once had a number, remnants of it or a shadow of the number or letter does survive in the cold, fresh water of Minnesota's lakes. However, year stickers that are of lesser quality than boat registration decals are often illegible, but sometimes they do remain intact – and of course this greatly benefits research efforts (Merriman and Olson 2013b, 9).

One beneficial tool that can be used when determining a wreck's registration date is the actual sequence of numbers themselves. For example, during the initial implementation of the MBWSA in 1959, the license numbers were assigned in this order: MN 0001 AA, MN 0002 AA, MN 0003 AA and so on. With this known, the last registration in the 'AA' series would be MN 9999 AA, meaning that each double set of letters would have 9,999 licenses associated with them. However, the letter combination 'AO' was not used in assigning registration numbers because 'O' could be confused with zero. Therefore, in the 'A' series (AA-AN and AP-AZ) there would be 249,975 watercraft licenses issued (John Nordby, personal communication, 3 October 2013; 11 December 2013). During the 1959-1960 registration period, an impressive 157,767 personal watercraft were licensed in Minnesota. During this time the last number and letter sequence to be assigned would have been MN 7782 AQ. Another indicator of early watercraft license numbers comes from the Minnesota Bureau of Boat and Water Safety in August 1964. The Bureau issued a warning to boat owners, a reminder to renew their boat licenses by year's end, including watercraft that had been assigned letter sequences within the BA-BH range that were issued in 1962. Therefore, any wrecks discovered whose letter series falls within that range were newly registered in Minnesota in 1962 (*Deephaven Argus* 1964; Merriman and Olson 2013b, 9-10; Sprouse 2005, 7).

Although Lake Minnetonka residents have seen decades of violent storms and weather, two tornadoes on May 6, 1965 caused significant damage to property – including the destruction and sinking of watercraft. Six

tornadoes on that day caused the greatest amount of property damage to the Twin Cities area that had been recorded up to that time, Lake Minnetonka's communities included. Four F4, one F3, and one F2 tornadoes moved through seven counties of the metropolitan area in just over two hours. Tornado #1 was an F4 storm and greatly affected Upper and Lower Lake Minnetonka through to Navarre. Tornado #2, the 'Deephaven tornado', was also an F4 storm and affected Lower Lake Minnetonka (National Weather Service 2010). In regards to watercraft, the boat registration system was invaluable to boat owners as it took weeks to clear damaged boats from storage buildings on Carson's Bay that were destroyed by the storm, and from marinas around the lake. As it was characterized, "some residents could not find their boats...[that were] blown away in the storm". The HCSWP issued warnings to boaters concerning debris floating in every section of Lake Minnetonka. In early June 1965, the director of the MBBWS instructed boat owners to report their destroyed boats to the Department of Conservation so the license numbers could be inactivated and that transferring a number from one boat to another was illegal. Further, all replacement watercraft required registration before they could be operated on any body of water in Minnesota. By mid-July the lake communities were recovering from the storms, including the "Old Minnetonka Boat Works storage building, long a landmark on Carson's Bay in Deephaven before the May 6 tornado dumped it into the lake, will be rebuilt on the same site....The old barn-like structure housed 135 boats...but the new building will not have as great a capacity" (*Deephaven Argus* 1965a-d; *Minnetonka Herald* 1949, 1951b, 1952, 1955a; 1964; *Minnetonka Record* 1965a).

### **Associated Property Types**

In the late 19<sup>th</sup> and early 20<sup>th</sup> Centuries, numerous vessels were constructed for the purpose of transporting tourists to different points around Upper and Lower Lake Minnetonka, often as a packet service. Further, personal watercraft were constructed locally for lake residents and boats were imported from nationally known manufacturers, as well as from many lesser-known companies for recreational activities. These wrecks are classified by their engine type and means of propulsion:

#### **1878 *Saucy Kate* Wreck (21-HE-420)**

Propeller steamer *Saucy Kate* was constructed from the remains of 45-foot *Kate/Katie May*, a steamboat owned by Captain Charles May. *Katie May* sank in Robinsons Bay when her boiler exploded on June 23, 1877, killing three of the five men on board. The *Katie May* was raised later that summer. Apparently her builder Maurice Godfrey incorporated the engine and sections of *Kate/Katie May*'s bow and stern into the new *Saucy Kate* and she was launched in mid-June 1878. Throughout the 1880s, *Saucy Kate* provided transportation to thousands of Lake Minnetonka tourists and residents. In the 1890 season, *Saucy Kate* was the first steamer to announce regular lake packet service beginning on May 25, meeting the Great Northern Railway train at Minnetonka Beach on Lafayette Bay and again meeting the train in Spring Park on the Upper Lake later in the day, providing passengers with a lake excursion or point-to-point transportation, whichever was desired. For the next few years, *Saucy Kate* reliably carried passengers on scheduled routes and on special occasions from the Upper to Lower Lake. *Saucy Kate* had a long working life on Lake Minnetonka, finally being sold to Captain John R. Johnson on July 24, 1897. On September 8, 1899, *Saucy Kate* caught fire at Solberg's Point while secured to a barge fashioned from part of the hull of the *City of St. Louis*. The barge sustained substantial damage but was saved, while *Saucy Kate* could only be towed away from the shore and let to burn. She sank nearby, with only her "smoke stack, the upper part of her engine and boiler and her charred gunwales" visible above the lake surface. The wreck was raised and moved to deeper water since she was a hazard to navigation. Her new location was reported to be in "deep water off Gale Island", but this account was erroneous. *Saucy Kate* was the oldest steamer on Lake Minnetonka at the time of her sinking and had been characterized as "one of the most popular boats on the lake". The wreck was identified some distance from Gale Island in 2013. The 59.00 foot long wreck is mostly buried on her port side and at the stern. Of particular note are the survival of futtocks, longitudinal stringers, a number of scarfs, a cleat, and supports for the large over-hanging rubrail that is suggestive of a sponson. Also noteworthy is the complete survival of the starboard side bow that extends 10 feet aft, including the intact gunwale, an upper bow rail, and an intact – although charred – stempost (Lake Minnetonka Navigation Company 1897; McGinnis 2010, 135; Merriman and Olson 2013b, 11-16, 2015, 6-7).

### **Wayzata Bay Rowboat Wreck (21-HE-417)**

The Wayzata Bay Rowboat Wreck is 16.00 feet long, 3.50 feet in the beam, and the gunwales and stern are degraded. There are seats (thwarts) buried in a thin layer of silt and at least one metal support for a seat is extant. The wreck has a seat back with thin supports that originally attached to both stern gunwales, a trait for the Moore Boat Works 'Special Finish, High Grade Family Row Boat', model No. 30 in their 1908 catalog (Moore Boat Works 1908, 20). The main difference between the Wayzata Bay Rowboat Wreck and No. 30 is the bow design. The wreck has a simple triangular piece that acts as the foredeck and No. 30 has a smooth and elegant design that incorporates the foredeck with the gunwales in a rounded curve. MHM contends the Wayzata Bay Rowboat Wreck is an earlier version of No. 30 and would be slightly more easily constructed. The amount of degradation to the wreck, particularly both gunwales and the stern, and the amount of silt build-up indicates the wreck has been on the bottom of the lake for a substantial amount of time. Since the boat was probably constructed several years before the 1908 catalog was published and the average lifespan of a small wooden boat was not long, a wrecking date of 1890-1910 is reasonable. Further, while the Moore Boat Works may have constructed the boat, at this point it cannot be proven, and there were several boat yards on Lake Minnetonka capable of building such a vessel (Merriman and Olson 2013a, 16-18).

### **Wooden Sailing Boat Wreck**

The Wooden Sailing Boat Wreck is 17.60 feet long, 3.90 feet wide, is clinker-built (constructed with overlapping hull planks, often called lapstraked), has a wineglass stern with an attached rudder post, and lies in 34 feet of water. The majority of the wreck forward is buried in silt, but there appears to be a small stanchion that is likely the remains of a mast. The presence of a rudder post, a diagnostic attribute, indicates the wreck carried a mast and sail. A form of the Wooden Sailing Boat Wreck appears Moore Boat Works and Ramaley Boat Company catalogs for Lake Minnetonka between 1908-1912. However, this type of wooden sailing vessel was constructed on the lake beginning in the 1880s. Taking into consideration site conditions and boat design, the boat was constructed between 1880-1900 and the wrecking process occurred prior to 1910.

### **St. Louis Bay Wreck (21-HE-422)**

The unpowered St. Louis Bay Wreck is 22.00 feet long, 6.00 feet wide, is a large clinker-built rowboat, and lies in 23 feet of water. The condition of the St. Louis Bay Wreck is similar to that of other rowboat wrecks in Lake Minnetonka – the Wayzata Bay Rowboat Wreck and the Gideon Bay Wreck. All three are similarly degraded, an indication of their light construction (their planks, frames, etc., are made of thinner wood than that of a larger boat or a boat that would carry heavy cargo) and possibly due to the fact that they were built of softer wood in comparison to other vessels; rowboats were often cheap and not expected to last long. The St. Louis Bay Wreck's starboard side is less degraded than the port side and the ridges of the clinker-constructed hull can be seen in the 'waviness' of the zebra mussels attached to it. The wreck has a small foredeck, a diagnostic attribute, and her stern is a distinctive wineglass transom design. The wineglass transom and the wreck's length have led MHM to hypothesize that she may have been part of the Hotel St. Louis rowboat fleet. The St. Louis Bay Wreck does not appear in the Wayzata-based Moore Boat Company or Ramaley Boat Company catalogs for 1908-1912, suggesting she was constructed earlier. Further, photographic evidence is abundant showing boats of the same size as the wreck plying Lake Minnetonka from the late 1870s, usually associated with boarding houses and hotels that kept fleets of rowboats for the enjoyment of their patrons (Merriman and Olson 2013b, 17-18). The boat was constructed between 1880-1900 and the wrecking process occurred prior to 1910.

### **Crystal Bay Rowboat Wreck (21-HE-457)**

The Crystal Bay Rowboat Wreck site is 13.00 feet long, 5.00 feet wide (the boat when floating had a narrower beam since the port side aft of the wreck has separated from the transom and fallen away a bit), and lies in 22 feet of water. The wreck is carvel-built (plank ends are attached edge-to-edge) with a square stern that has triangular braces on the port and starboard aft quarters at the gunwale level. The wreck's starboard gunwale is degraded. The vessel was constructed with numerous thin frames and futtocks that are clearly seen along the wreck's sides, with stringers running along the inner hull for longitudinal strength.



Near the bow, a caprail survives on the port side gunwale. The square transom has two carrying handles attached on the port and starboard sides. There must have been thwarts that acted as seats and athwartships support that are no longer extant. The boat was constructed between the 1880s and early 1900s, and the wrecking process occurred prior to 1910 (Merriman and Olson 2015, 16-17).

#### **Maxwell Bay Rowboat Wreck (21-HE-469)**

The Maxwell Bay Rowboat Wreck site is 15.70 feet long, 3.70 feet wide, with a 3.20 wide transom. is carvel-built, and extremely degraded. The wreck's port side aft quarter is nearly gone, as well at both sides of the stempost. The square transom partially survives. The vessel was constructed between the 1880s and the early 1900s, and likely sank prior to 1910 (Merriman and Olson 2015, 18).

#### **Gideon Bay Wreck (21-HE-415)**

The Gideon Bay Wreck is 16.00 feet long, 4.50 feet wide, has a wineglass transom, and is carvel planked. The wreck may have been built by the Moore Boat Works prior to 1912 or the Ramaley Boat Works between 1912-1920, but the wreck is likely older. Various forms of rowboats were constructed for decades by a variety of local boat-builders for individual families, fishermen, and as parts of rowboat fleets owned by hotels and resorts (Merriman and Olson 2013a, 18-20, 2014b, 44-45). The boat was constructed between the 1880s and 1900, and the wrecking process occurred prior to 1910.

#### **Fisherman's Friend Wreck**

The Fisherman's Friend Wreck site is 12.80 feet long, 2.80 feet wide, has a 1.40 depth of hold, lies in 22 feet of water, and is capsized. The wreck is carvel-built with a sharply pointed bow and square stern, with athwartships bottom hull planking. A rubrail is attached to the hull below gunwale level, but it has come loose in places on the starboard side. A hole is located on the starboard side aft quarter. A similar boat called the 'Fisherman's Friend' was constructed by Ramaley Boat Company by 1912, although the boat could have been constructed earlier. The boat was constructed between the early 1900s and 1915, and the wrecking process occurred prior to 1920.

#### **Marine Launch Boilers Site (21-HE-421)**

The three riveted horizontal steel marine launch boilers that comprise this site are the only steam power plants to survive from Lake Minnetonka's steamboat heyday. Boiler 3 is 3.60 feet in diameter and 12.10 feet long. It is a fire tube boiler sitting on the lake bottom upside down whose smoke box is missing. It has a minimum of 23 tubes running longitudinally through the boiler's body. Its manhole cover is intact and has two bridge clamps holding it in place. Boiler 3 is a single pass fire tube boiler since the gases of combustion pass only once through the fire tubes that run horizontally through the length of the boiler. Boiler 1 is 2.85 feet in diameter and 10.30 feet long. The shape of Boiler 1 is consistent with fire tube boiler design due to its steam dome. It seems that Boiler 1 has been gutted as is evidenced by its open end and apparent hollowness. Boiler 2 is 3.50 feet in diameter and 9.20 feet long. It is also upside down and has drainage holes evident like Boiler 3 although some may be obscured and it is gutted like Boiler 1. Boilers of this size in a marine context are referred to as 'launch boilers' – and Lake Minnetonka was rich with medium-sized steam launches. These three launch boilers represent the only known surviving Lake Minnetonka marine boilers that were utilized during the lake's heyday of steam navigation (Merriman and Olson 2013b, 19-22).

#### **1901 George/Excelsior (21-HE-399)**

Maurice Godfrey and George Day constructed the sternwheeler *George* in 1901. She measured 125.00 feet long and 22.00 feet in the beam and was re-designed in 1904 and re-named *Excelsior*. She operated on Lake Minnetonka, becoming one of the Twin City Rapid Transit Company excursion vessels in 1906. She was burned as a spectacle on August 9, 1909, with 5,000 people gathering to watch her demise. *George/Excelsior* was labeled the 'Unknown Stern-wheeler' wreck during the SHPO-sponsored survey of Lake Minnetonka. Of particular note are the survival of futtocks, clamp, much of the forward decking is intact, the H-bitt, flag pole, sponson supports, gunwale along both starboard and port including the rubrail, cylinder timber supports, and the stern is charred but intact to the gunwale. On her foredeck, an H-bitt and

flagpole are intact, her gunwale survives along the entirety of the wreck, and both her metal cylinder timber supports survive at the stern. She lies in 56 feet of water (Merriman and Olson 2012a, 29, 2015, 8-9; *Minnetonka Record* 1912a).

### **1906-2003 Big Island Steamboat Pier, Amusement Park, and Veterans Camp (21-HE-402)**

The Big Island Amusement Park was constructed during 1905-1906 by the TCRT. The development of the park was a huge endeavor, one dependent on the construction of an incredible amount of infrastructure such as dredging the bay for steamboat traffic and strengthening the shoreline, the construction of the steamboat pier, the placement of electrical lines and conduits, sewers, a well, the grooming of walkways with pergolas, the placement of benches, the construction of buildings, and the transportation of building materials to the island. The buildings on the island, of Spanish Mission-style design, consisted of a water tower, commissary, women's and men's dormitories, toilets, music hall, staff kitchen, a pump house, ice house, boat house, and picnic kitchens. The amusements constructed for visitor's included a roller coaster, old mill ride, a 'fun factory', a carousel, picture gallery, kinetoscope, and a hooligan slide, along with 48 Johnson rowboats for use in the bay. TCRT's workmen rushed to complete enough of Big Island Park's amusements and infrastructure in time for the grand opening on 6 August 1906. In reality the park was not finished until the following year. However, "Innes and his famous New York band" served as the main entertainment at the music hall and were well received, playing at the island for over a week. The Park was open between 1906 and 1911, with the music hall hosting the likes of John Philip Sousa's band and the Minneapolis Orpheum Theatre Orchestra for the entertainment of visitors. Ultimately, the Park was unprofitable, and it closed in late August 1911 and it was mostly dismantled during 1918, with any metal used as reinforcements for its mission-style reinforced concrete architecture recycled for the World War I effort. In 1923, the Big Island Veterans Camp was established as a quiet place for World War I veterans and their families and some years later it was opened to all veterans. An examination of the roller coaster base area, the contours of the old mill ride, and an extensive walking survey of the island was completed in 2007. At that time, many foundations of the Big Island Amusement Park buildings and amusements survived, along with infrastructure constructions such sewers. The City of Orono purchased the land by 2006 and since that time, most of the Veterans Camp buildings have been demolished. Also in 2007, a brief survey of five mission-style arch bases was conducted and the Steamboat Pier remains were recorded (Construction Records: Ledgers, TCRT Records 1906-1908, 509, 513, 515-517, 519; Merriman and Olson 2007, 2012a, 43-47; *Minnetonka Record* 1906c-e; Olson 1976, 202-203, 205).

### **Capsized Wooden Boat Wreck (21-HE-418)**

The capsized Wooden Boat Wreck is partially buried in lake silt, is approximately 28.00 feet long, has a hard chine, and a substantial forward keel that disappears into a 4.00 foot-wide nearly flat bottom at amidships and aft. At this point the keel resembles a ridge and not a traditional-looking keel that drops below the hull of a boat. The beam is approximately 5 to 6 feet, and the wreck was not a sailing vessel – she is too large, too heavy, her flat bottom combined with the deep keel at the bow would make her sluggish, and she has no fin keel. She was powered by steam, gasoline, or she may be a naphtha launch. The starboard side bottom of the wreck has surviving black paint and on the port side bottom white paint survives. Most of the wreck's paint has degraded above the silt line, exposing the vessel's wood screw pattern. During the probing to locate the stern – whose shape is still undetermined – a possible hole in the hull's bottom was located that may explain why the boat did not right herself during the wrecking process. The vessel's sturdy, heavy wood construction and the use of slotted wood screws that are evident throughout the hull's bottom indicates she was built prior to the common use of Phillips head screws by the mid-1930s (Merriman and Olson 2013a, 20-24; Rybczynski 2000, 83-84).

### **Wooden Trunk Cabin Cruiser Wreck (21-HE-446)**

The Wooden Trunk Cabin Cruiser Wreck is 22.00 feet long and 6.50 feet wide with a flush foredeck, 1 port and 1 starboard porthole near the bow, and a square transom. Originally the boat would have had an inboard engine and propeller for propulsion. The hull was painted white and the bottom of the hull has a significant amount of grey anti-foiling paint still extant. A splash rail is attached to the outer hull just under the gunwale amidships and extends diagonally to the stern. The joint where the hull's sides meet the stern

is covered with a metal strip. On the port side of the transom, one strake has extensive dry rot that occurred prior to sinking and is an indicator of age and wear and the starboard quarter gunwale is damaged. The wreck has a forward trunk cabin and an open amidships cabin section with a canopy extending aft, with hand rails on top. The trunk cabin and canopy are dislodged and have collapsed onto the starboard side. The trunk cabin might have had rectangular windows on three sides, but since the cabin roof has collapsed, this is difficult to ascertain. Just above the waterline forward of amidships on the starboard side, a through-hull hole exists that may have allowed the discharge of toilet water. This hole was plugged with a rectangular piece of wood prior to the boat's disposition on the lake bottom. At the transom stern on the starboard side a similar rectangular piece of wood is wedged into the round exhaust hole. Further, it seems that the trunk cabin's glass had been removed from the vessel prior to her disposition on the lake bottom. On the port side bow, also above the waterline, a jagged hole is punched through the hull. This hole would allow water to enter the boat in calm waters if the vessel was moving. The wreck's engine, which would have been located inside the open cabin amidships, was removed prior to the vessel's sinking. Therefore, MHM contends the boat was stripped of her engine, windows, and some fittings, the toilet discharge hole and exhaust hole were plugged in order for the vessel to be towed successfully, unwanted wood and other items were placed in the hull, and a hole was punched into her port side bow sending her to the bottom of the lake. The wreck's damaged condition – her dislodged trunk cabin, open cabin, and canopy, and her damaged port side gunwale – probably occurred when she hit the lakebed hard (Merriman and Olson 2014b, 14-17).

#### **Wayzata Bay Motorized Ice Boat Wreck (21-HE-416)**

The Wayzata Bay Motorized Ice Boat Wreck is approximately 9.50 feet long and 7.00 feet wide and is constructed of wood. The wreck is tipped over, with two runners – the port and aft runners - above the lake bottom in the water column and the third – the starboard runner – is slightly buried in silt. Indications that the ice boat is motorized are the presence of the steering column on the underside, the surviving engine mounts, and the shorter length of the vessel. Sail-powered ice boats are long and light weight while the Wayzata Bay Motorized Ice Boat Wreck is stubby and wide for her length. Motorized ice boats were first constructed in New York beginning in 1911. In Minnesota, Charles Lindbergh and two of his friends constructed motorized ice boats using motorcycle engines and raced them on Lake Mendota in 1921-1922 (Davis 1959, 73-74; Merriman and Olson 2013a, 25-27).

#### **Wooden Sailboat Mast or Boom**

The Wooden Sailboat Mast or Boom Site 16.10 feet long by 6 inches square in cross section. The wood is tapered at the top with a hole drilled through to receive a line. A line is attached to the artifact but it does not thread through the hole (Merriman and Olson 2015, 26-27).

#### **Damaged Bow Utility Wreck (21-HE-447)**

The gasoline-powered Damaged Bow Utility Wreck is 15.60 feet long with a 63 inch beam with an inboard marine engine enclosed in a dog house on deck. Her port side bow is destroyed and separated from the gunwale. The starboard bow is damaged and the 'M' in 'MN' of her registration number is attached to the hull; the shadow of the 'N' is evident. A section of the wreck's stempost survives and is attached to a piece of the starboard hull that was pushed into the bow space during the wrecking process. A smaller piece of the bow (with a fragment of the stempost still connected) where the majority of the registration number had been affixed to the hull, but is now mostly missing, was located lying on the lake bottom. The last letter of the registration, an 'L', is extant and the shadow of an 'A' is also apparent. Therefore, the partial number is MN \_ \_ \_ \_ AL and indicates the boat first registered with the State in 1959. The undamaged starboard side of the hull aft of the extant 'M' has no evidence that it had a State year validation sticker adhered to it. Physical evidence supplied by the DNR suggests that year validation stickers were first used in 1962 (Merriman and Olson 2013b, 35-39, 2014b, 22-24).

#### **1947 Correct Craft Utility Wreck (21-HE-467)**

Lying in 52 feet of water in an east-west orientation, the Correct Craft Utility Wreck sank after July 1, 1959 (due to the presence of a registration number submitted to the boat owner in 1959) and before 1962 due to

the lack of a year validation sticker alongside her registration number, MN 1489 AP. There is no evidence the wreck ever had a validation sticker, an attribute whose usage – determined from historical evidence – began in 1962. The site is 18.00 feet long and 6.80 feet wide. The visible parts of her wooden hull are in exceptional condition but she is buried in silt nearly to her gunwales, so her bottom hull cannot be assessed for damage that may have occurred in a collision. The boat's cockpit is intact, as is her engine cover (dog house), although the dog house lid has been opened and lies on top of the front cockpit. Regardless of the presence of a cockpit, the wreck is a utility and not a runabout due to the open nature of the aft portion of the boat and the ability to walk around the dog house. All of the wreck's metal fittings - chocks, cleats, windshield frame, navigation lights, dashboard plate, step pad backs, mast light shaft and base, gas tank cover, and even the key - are all in place. All the rubber components that can be seen - the step pads - are extant. The plastic attributes that can be seen - the steering wheel (made of bakelite?) - is intact. The reason for her sinking cannot be determined at this time, but on-going research using contemporary newspaper accounts may provide more data. A large pile of silt accumulation on the wreck's foredeck is unique; no other wreck located to date has this feature (Merriman and Olson 2015, 18-20).

#### **1948 Century Deluxe Utility Wreck (21-HE-423)**

The gasoline-powered Century Deluxe Utility Wreck has a propeller turned by an inboard marine engine enclosed in a dog house on deck and is 17.00 feet long. There is no registration number on her bow and no evidence that a number was ever applied to the hull indicates the boat sank prior to mid-1959. It is unknown why she sank but intentional scuttling is improbable due to the presence of her fittings – chocks, step plates, bow and stern eyes, navigation light, steering wheel, windshield, dashboard faceplate, gas tank cover, gas tank, upholstered fore and aft seats, and most importantly, her engine. The visible parts of her wooden hull are in exceptional condition but she is substantially buried in silt, so her bottom hull cannot be assessed for damage (Merriman and Olson 2013a, 27-30, 2013b, 22-25).

#### **1949 Alumacraft Center Console Model R Wreck (21-HE-448)**

The Alumacraft Center Console Model R Wreck is 11.58 feet long and 54 inches wide, but the site is 13 feet long due to the addition of a 1950 10 HP Johnson Super Sea Horse outboard motor. The wreck lies in a southwest to northeast orientation, with the bow pointing to the southwest. The wreck has an enclosed foredeck with a bow handle, two bench-style seats, a square transom, stern carrying handles, hull-length splash rails, windshield, fuel line, and gas tank. The boat sank in early June 1952, with 14 year-old Tony McKeown and Robert Odell on board when it capsized by a quartering wave (Anthony McKeown, personal communication, August 4, 2014; Merriman and Olson 2014b, 17-22; *Minnetonka Record* 1952, 1953).

#### **1949 Alumacraft Model A Wreck**

The Alumacraft Model A Wreck is 14.00 feet long with a 29 inch beam amidships, has four seats, a bow casting designed for strength that incorporates a carrying handle, a hull-length splash rail, and 2 oarlocks on each gunwale. The wreck is standing on her stern in the water column, the outboard motor's powerhead is buried in the lake bottom, and the lower unit and propeller are protruding out of the sediment. Her registration number is MN 0512 AK, indicating she first registered in 1959, and she carries a blue Minnesota-shaped validation sticker from the years 1983-1984-1985. Her date of manufacture was 1949 (Merriman and Olson 2014b, 29-30).

#### **1949 Alumacraft Model R Wreck**

The Alumacraft Model R Wreck is 11.70 feet long and 54 inches wide, her registration number is MN 4757 AQ; on her port side, her number was affixed to the hull backwards. The wreck's registration letters, AQ, confirm she was first licensed in 1959 and last registered in 1979. She would have been powered by an outboard motor (Merriman and Olson 2013a 31-33, 2013b, 53-54).

#### **Two Early 1950s Weeres Pontoons**

The design of two pontoons on the bottom of Lake Minnetonka suggests they were constructed by the Weeres Company – or at least inspired by Weeres – in the early 1950s. Ambrose Weeres of Richmond, MN, experimented with “steel barrels, welded together end to end” that supported a flat platform boat deck.

Weeres produced "The Empress" in 1952. Mr. Weeres sold several of these pontoon boats around Richmond; with their success, Weeres Pontoons was founded and is still in business (Weeres Pontoons 2014). One pontoon is comprised of 14 barrels welded end to end and reinforced with 7 metal straps that are visible; there may be more straps that are not discernible. There are 10 square holes cut into the top of the drums to accept wood supports for a flat boat platform. One end is buried in silt and it is apparent the 14th barrel is angling downward, suggesting a tapered end. The pontoon measures 39 feet long, assuming that the 14th barrel is complete. The second pontoon is constructed similarly to the first one, although it is shorter at 14 feet long (assuming the 5th tapered barrel is full length) and it cannot be discerned if there are metal straps reinforcing the pontoon. This shorter pontoon is comprised of 5 barrels with 3 square holes on top to accept the platform supports and its end tapers (Merriman and Olson 2014b, 45-47).

#### **1954 Correct Craft Aqua Skier Deluxe Wreck (21-HE-424)**

The Correct Craft Aqua Skier Deluxe Wreck is 17.33 feet long, 5.85 feet in the beam, and the wooden hull is painted white. She has a clearly visible registration number on her port and starboard bow: MN 9571 AN in bold red metal letters and numbers. She also has two cursive "Correct Craft" emblems on her port and starboard aft quarters that are loose and bulging outward, not completely attached to the hull. On her closed bow she has a bow eye, lifting eye, navigation light, radio antenna, and an Iva-Lite spotlight. The remains of a windshield with its brackets also lie on the foredeck. Four step plates that have the 'Correct Craft' emblem on them are attached to the gunwales on port and starboard just aft of the windshield and amidships aft. On both port and starboard aft there are two chocks and amidships there is a lifting eye with a line attached and an unattached mast light. The wreck has an intact dashboard with the appropriate gauges and an ignition switch set in a backing plate, a controller for the Iva-Lite, and an intact steering wheel with its throttle set to idle. The front seat is present while the aft seat may be missing or displaced. The engine cover is missing or at least open and the Gray Marine 110 HP engine is visible (Merriman and Olson 2013b, 25-29).

#### **Small Aluminum Wreck**

The unpowered Aluminum Rowboat Wreck is 11.50 feet long with a 3.20-foot beam at her widest point, the gunwale has a flat sheer, and it is covered with a caprail of extruded aluminum. At the transom, a wide and flat one-piece stern casting overhangs the back of the wreck, large enough to accept a small outboard motor. Her damaged pointed bow is suggestive of a canoe and her transom stern narrows at the bottom creating a trapezoidal shape that is gently rounded where it meets the wreck's bottom. The wreck's bottom is flat with a defined, but not hard, chine. She has three bench seats, the one nearest the stern is exceptionally wide, and the port side oarlocks are extant while the starboard side examples are missing. At least one aluminum rivet is visible going through the hull on the port stern quarter. On both stern quarters the remains of a brand name are visible, but illegible; what appears to be an 'S', 'a', and what might be a 'u' are located on the port side, and a 'u' may be attached to the starboard side. These letters are not painted or transferred onto the hull but are applied, and appear to be metal or plastic (Merriman and Olson 2014b, 27-29).

#### **1959 Owens Cruiser Deluxe Wreck**

The Owens Cruiser Deluxe Wreck sank after a collision when her bow was cut off by another boat. The site is 16.40 feet long by 8.20 feet wide and was originally was 22.00 feet long and 7.80 feet in the beam. The wreck is constructed of wood and was powered by a gasoline inboard engine. The collision that sank the Owens Cruiser Deluxe Wreck occurred on Friday, July 31, 1970 around midnight. The Owens collided with an 18-foot runabout of unknown model, sinking both boats. A boater in a 21-foot Trojan cruiser heard cries for help in the water as he was passing nearby. The rescuer claimed, "I heard cries. I turned on the spotlight and all I could see was debris, and four people in the water amid the debris." Three passengers on the runabout, two women and one man in their 20s, were killed in the collision. One of their bodies was recovered within an hour of the collision and the others were located before Saturday evening. The wreck of the runabout has not been located (Handley Marine Division 1959; *Maverick* 1970; Merriman and Olson 2013b, 39-42, 2014b, 38-40; *Mound-West Tonka Minnetonka Sun* 1970).

### **1959 Terra-Marina Amphibious Houseboat Wreck**

The unique and rare Terra-Marina Amphibious Houseboat Wreck was powered by a 35 HP Evinrude 50th Anniversary Gold Jubilee Lark outboard gasoline motor. The wreck is 30.00 feet long with a debris field of artifacts surrounding her, enlarging the site. The boat was hit by a great force in the bow, her galley is destroyed, and there is substantial damage along her port side. The damaged aft section of her cabin still stands and the roof is intact. Terra-Marina hulls are steel vessels with wheels attached to an axle amidships and two vertical slots on the scow-shaped bow would take a large triangular towing bar that with a head that would fit onto a ball hitch. When launched, the wheels submerge with the bottom of the hull. When the boat needs to leave the water, the towbar would be attached and it would roll right out of the water. Advertisements for this vessel type describe them as "the houseboat with the built-in trailer". The boat was first registered in 1959 according to her number, MN 7782 AQ, and has a red 1974-1975-1976 year validation sticker on a fallen cabin wall (Merriman and Olson 2013a 39-42, 2013b, 54-55, 2014b, 40-41; *Minnetonka Record* 1965b; Terra-Marina Mfg. Co., Inc. 1959, 1960).

### **1959-1960 Owens Twin Sport Wreck**

The Owens Twin Sport Wreck is a fiberglass utility with the letters 'WENS' at the port stern. The site is 17.00 feet long and 6.67 feet in the beam. The wreck has no outboard motor attached, an indicator she may have been sunk on purpose, or if she sank in an accident, the motor was retrieved. The wreck has a ding on the port side bow, indicating a collision with a hard surface. She also has two holes in her foredeck that may be damage from anchors. One suggestion has been that she sank in a 1965 tornado, but this cannot be confirmed at this point (Merriman and Olson 2013a, 34-39).

### **Wooden Motor Boat Wreck**

The Wooden Motor Boat Wreck is 13.50 feet long and 4.50 feet in the beam. She is carvel-built with intact gunwales, with the exception of a wedge taken out of the hull on the starboard side forward quarter, and a partial surviving caprail. The wreck has a pointed bow with a towing ring and line attached to it, a square transom, narrow frames are extant throughout the hull, and a stringer runs longitudinally just above the turn of the bilge on both sides. At gunwale level on the starboard side there is a semi-triangular brace on the stern quarter, there is a vertical knee in the center of the transom for strength when the vessel carried a motor, the transom edge amidships is also reinforced, and the stempost is intact. The boat would have had one or more seats in the form of thwarts that may survive, dislodged and lying under the silt in side the hull. One metal oarlock is attached to the gunwale on the starboard side and the wreck is held together with slot-headed woodscrews. Some white paint survives on both the inner and outer hull. The wreck's registration number is MN 6061 AS, indicating she was first registered in 1960, and she may have a Minnesota-shaped year validation sticker on her port side. The registration number is also the primary evidence that the boat carried a motor since smaller human-powered row boats did not require licensing. The Wooden Motor Boat Wreck sank prior to 1972 because she does not appear in the archived records at the DNR (Merriman and Olson 2015, 21-22).

### **1961 Blue Star Miamian Custom Wreck (21-HE-bn)**

The Blue Star Miamian Custom Wreck is 15.80 feet long with a 76.80 inch beam, carries a 1960 40 HP Johnson Super Sea Horse outboard motor, and is constructed of fiberglass. Along the gunwale there appear to be attachment points for a bimini top. The gas tank is extant on her starboard aft quarter with a broken fuel line running from the motor onto the lake bottom. The wreck has a partial registration number on both her port and starboard sides, MN 59\_5 BB; this letter sequence falls within the BA-BH range that were issued in 1962. The presence of a 1964-1965 validation sticker and the up position of her outboard suggests she was resting at a dock, broke free, and sank during the May 6, 1965 Deephaven Tornado (see Urban Centers below). During the wrecking process her seats and windshield were dislodged from the vessel and are not currently with the wreck (*Deephaven Argus* 1964; Merriman and Olson 2013b, 29-32, 2014b, 34-37).

### **1962 Span America Nomad Wreck**

The Span America Nomad Wreck is 13.70 feet long with a 5.70 foot beam and is made of fiberglass. Her

hull is blue and white, her front and back seats are missing, and her cleats, step pads, and mast light connector are extant. Her dashboard dials are missing and she carries no outboard motor or gas tank. The missing motor and gas tank suggests she was scuttled intentionally; the missing dials may have been removed prior to that action. The wreck's registration number is MN 0874 BG and a 1993 validation sticker is affixed to the hull, her last year of licensing. The BG letter sequence was assigned to watercraft first registering in 1962 in Minnesota. Evidence recorded on the wreck confirms she is a 1962 model as indicated by the logo design that survives on her starboard stern quarter. This particular design was used by Span America in 1961 and 1962 only, and the 1962 Nomad model was exactly 13.70 feet long as opposed to a bit shorter in 1961. The 1962 Nomad model was offered as a utility or runabout; the wreck has two benches that would have held seats, indicating she is a runabout. Span America operated out of Red Wing, MN in 1962, making the wreck of local construction (Merriman and Olson 2015, 22-24).

### **Fiberglass Racing Boat Wreck**

The Fiberglass Racing Boat Wreck is 16.10 feet long with a 6.30 foot beam, a square transom, and sharply pointed raked bow with a foredeck. The boat has a hard chine, a cockpit amidships, the hull is painted blue with white and blue stripes near the gunwale and a white foredeck. The wreck has a large and heavy inboard engine; during the wrecking process it became imbedded in the lake bottom and buried. The wreck's registration number is MN 1352 BJ, indicating the boat first registered in Minnesota in 1963 and it does not have a year validation sticker. It does not appear in Minnesota State records indicating the wreck sank prior to 1972, the first year that boat registration license information survives (John Nordby, personal communication, 16 September 2015). Currently the year of manufacture and brand remain unknown.

### **1967 Sea King Aluminum Canoe Wreck**

The unpowered 1967 Sea King Aluminum Canoe Wreck registration number is MN 6372 CD and was last licensed in December 1977. Sea King canoes were sold through Montgomery Ward, along with Grumman canoes and other Sea King boats. Her model number is 26179, she was constructed with flotation foam, and had a 780 pound carrying capacity. She is 17.00 feet long, 37.50 inches at her widest beam, has small enclosed fore and afterdecks, bow and stern eyes, three thwarts are visible spanning her silt-filled hull – the middle one is broken – and she has one seat fore and one aft. Her gunwale and decks are painted red. She carries a Danforth anchor, chain, and line at the bow and a line is attached to the stern eye; the aft thwart also has a line associated with it (Merriman and Olson 2013b, 45-48; Outdoors, Inc. 1972).

### **Red Fiberglass Wreck**

The Red Fiberglass Wreck is a capsized fiberglass boat with her stern imbedded in the lake bottom while her amidships section and bow are suspended in the water column. The wreck has an inboard/outboard Chrysler Marine Volvo Penta engine in an aft dog house and her lower unit (outdrive) and propeller extend from her square transom onto the lake bottom. The wreck's rear seats are resting in the silt along with the engine cover. The wreck is 16.20 feet long and 7.00 feet in the beam, while the site is 19.00 feet long overall when the outdrive is taken into account. Her registration number is MN 3752 EG, was registered through 1991, and sank in 1989. The boat's driver was located and it was learned that during a trip in choppy waters, the outdrive's boot (rubber transom seal) failed and water rushed into the boat at such a rate that the boat began sank quickly (Merriman and Olson 2013b, 48-51, 2014b, 42-44).

### **1976 Lund Aluminum Fishing Boat Wreck**

The Lund Aluminum Fishing Boat Wreck is a 16.00 foot Lund aluminum fishing boat with a 5.70 foot beam. The wreck's seats had been removed and concrete blocks placed inside, causing negative buoyancy resulting in her sinking. A series of small craft thefts from Tonka Bay occurred in July 1977 and one of these boats, reported missing on July 13, belonged to a Wayzata resident. The registration number on this stolen boat was MN 4617 DQ and that number matches the Lund Aluminum Fishing Boat Wreck. Her 1976 25 HP Johnson motor and other equipment were not sunk with the hull (*Lake Minnetonka Sun* 1977; *Maverick* 1977; Merriman and Olson 2013a, 45-47).

### **1980 Larson Delta Sport Cruiser 7000 Wreck**

The Larson Delta Sport Cruiser Wreck is a fiberglass boat that was powered by an inboard/outboard engine, manufactured in Little Falls, MN. The wreck is 21.25 feet long with an 8.00 beam, has a bow cuddy, a stern swimming platform and ladder, and her stern quarters have a line of air scoops for hull venting. The wreck retains all of her fittings such as cleats, dash dials, windshield, railings, and a bimini top. Her seats are intact and there are cushions in the cuddy, along with all other fittings. The wreck's registration number is MN 3559 EE, a designation attained in 1980, and she was last registered in 1982 as indicated by a validation sticker. There is no obvious damage to the wreck's hull that could explain her sinking, but damage may be evident under the silt or the outdrive's boot may have failed. The vessel may have been sunk intentionally, but most often the engine and other valuable items would have been stripped from the boat prior to the scuttling. The hull is white with red/burgundy accents and bimini top (Merriman and Olson 2015, 24-25).

### **Aluminum Canoe Wreck**

The Aluminum Canoe Wreck is 16.00 feet long and 2.90 feet in the beam amidships, has two seats fore and aft designed with carrying handles, three gunwale-level thwarts, and two pointed ends. The canoe's sheerline is nearly straight, an attribute more commonly found in the design of fiberglass canoes. The 16-foot length is also anomalous since the majority of aluminum canoes measured either 15 or 17 feet, and the 16-foot long examples most often had square sterns. The wreck has a round green registration sticker along with a Minnesota-shaped validation sticker dated 1984 adhered to it on the bow's starboard side, suggesting she sank in the mid-1980s. The round sticker is unreadable but with some cleaning, the registration number may be legible and it is unknown if the port side sticker exists. She may have been scuttled as evidenced by the removal of her bow and stern decks and the flotation foam that would have been contained by a bulkhead attached to the small deck pieces. Amidships and toward the stern on the port side the canoe experienced thwart and hull damage, being somewhat crushed (Merriman and Olson 2014b, 31-32).

### **Half Canoe Wreck**

The Half Canoe Wreck is literally the bow half of an aluminum canoe. The wreck is 8.70 feet long and 2.80 feet wide amidships. There is a round registration sticker evident on the starboard side, but it is unreadable. One thwart survives and the bow is enclosed. No seats are evident and the canoe appears to have split apart at a riveted seam (Merriman and Olson 2015, 26).

### **West Arm Pontoon Wreck**

The West Arm Pontoon Wreck is capsized and lies on exceedingly soft silt and the visibility on the wreck site is zero. The bottom of the wreck is 22.60 feet long by 7.60 wide, has a square transom with some wooden elements (determined by touch), and has no outboard motor attached to the stern. Silt completely covers the wreck's deck and it was not possible to find a registration number. The pontoons are made of steel and the port side float is rusted through in places. In cross section the pontoons are angular, not rounded (Merriman and Olson 2013b, 33-34).

### **Metal Pontoons**

The Metal Pontoon Sites lie 115 feet from each other and are comprised of two metal pontoons. One is nearly square in cross-section with an angular tapered end. This pontoon is 22.50 feet long by 2.30 feet by 1.70 feet. It has metal ridges on top that would attach to the pontoon boat's platform. The other pontoon is hexagonal and measures 23.70 feet long by 2.30 feet in diameter. The top of this pontoon has holes that served as attachment points for the pontoon deck (Merriman and Olson 2015, 27-28).

### **Pontoon Raft**

The overturned Pontoon Raft measures 8.00 by 11.00 feet and is constructed of wood and metal. One of the pontoons is intact but the other has a gash running its length, indicating why it may have gone down (Merriman and Olson 2013a, 51).



## ***Urban Centers (1860-1965)***

As mentioned above, Excelsior was founded in 1853 and Wayzata in 1854. During the late 1850s and 1860s, Lower and Upper Lake Minnetonka remained largely forested or was cleared farmland. Transportation between lake settlements primarily depended on watercraft until the late 1880s. The Upper Lake is connected to the Lower Lake's Lafayette Bay by the Narrows Channel and the connection between Crystal and Smith Bays. Originally the Narrows was called 'Hull's Narrows', a marshy shallow 40-acre area of wild rice that served as an adequate passage for small boats and shallow-draft steamers. In 1877 the Narrows was described as a "narrow channel through a marsh forming the connecting link between Upper and Lower Lakes. It was, in early times, a passage for rowboats, but the advent of steamers required its dredging and widening, and it is now a good sized canal". This 'good sized canal' was not adequate for long, however, and the 'New Narrows' channel was dug just northwest of Hull's Narrows in 1884. By 1888 a road was constructed (current County Road 19) between the Upper and Lower Lakes and as a consequence, a ferry boat to bridge the gap between Minnetonka Lake Park (now Tonka Bay) and what is now Navarre on the way to Minnetonka Beach and Spring Park was needed. The ferry, a wooden flat boat, was constructed by Moses Bickford at the Excelsior Commons and measured 25 feet long with an 18-foot beam (*Lake Minnetonka Tourist* 1876; McGinnis 2010, 72; *Northwestern Tourist* 1888; *Tourist and Sportsman* 1877).

By the mid-1870s, Upper Lake Minnetonka was being touted as a natural wonder, with an abundance of wildlife, islands, and a number of boarding houses from which to enjoy fishing and boating. It was described as being "nowise inferior to the lower part, but, on the contrary, in natural beauty and variety of wild scenery, much superior". In the West Upper Lake, Crane Island was described as being "held sacred by the residents in its vicinity, from the fact of its being the summer abode of a colony of blue heron...[and] there is a penalty attached to shooting these Upper Lake pets". Eagle Island, likewise, was named for a pair of eagles spotted there early on, a rare site on Lake Minnetonka. Wawatasso Island, once called Dunlap's Island and Fire-fly Island - or 'Little Firefly' in Dakota. The wild nature and inaccessibility of the Upper Lake prompted local boatman Charles May to put together the first fleet of steamers on Lake Minnetonka, beginning in 1874 near Excelsior. May owned the 65-foot propeller *May Queen* designed by Captain N. H. Harrison and mastered by Captain William Rockwell, who later owned *May Queen* and constructed a hotel on Shady Island in 1879. May's maritime commercial interests also included the sidewheeler *Rambler* in 1874 and the propellers *Kate/Katie May/Saucy Kate* in 1876, *City of Minneapolis* in 1880, and *Mary/Hiawatha/Scandinavian/Star* in 1882 (*Lake Minnetonka Tourist* 1876; McGinnis 2010; *Tourist and Sportsman* 1877, 1879).

By 1875, Mound City was established on the Upper Lake's Cooks Bay and was described as "a new village, with a store, post office, blacksmith shop and hotel...and a number of residences have also been built there. The purchase of cord wood and stave bolts is the principal feature of trade...[and] a saw mill was put in operation there during the past winter." The aforementioned hotel was the Lake View House, established by Mathias Cook as 'Cook's House' in 1854, being enlarged and renamed in 1867. Chapman House opened in July 1876 and was described as a "new and commodious hotel...to rival in size and elegance any house on the lake". These boarding houses boasted large grounds of shade trees, croquet, fleets of rowboats for fishing and sailboats for fun, and ice houses for the 'daily catch'. Most importantly, Mound City had daily steamboat visits from Excelsior and Wayzata on the Lower Lake so patrons could enjoy several hours of lake excursions. For longer-term visitors, local boat-builders R. R. Cummings and E. K. Weeks constructed fleets of rowboats and sailboats for Mound City's hotels and boarding houses (*Lake Minnetonka Tourist* 1876; Meyer 1997, 61-62; *Tourist and Sportsman* 1877).

In 1880 Spring Park was established on part of the land claimed by John Carman and was the location of the 'Bon Ami Club', founded by a group of St. Paulites. The club accommodated camping, croquet, sailing, rowing, picnics, was an excursion stop for steamboats, and supported several summer cottages. In 1881, the Lake Minnetonka Navigation Company (partly owned by railroad operator James J. Hill) operated four steamboats, the sternwheeler *Hattie May* and the propellers *City of Minneapolis*, *Nautilus*, and *Lotus*, to accommodate summer resort owners and tourists, and lake residents. The large new sidewheeler *City of St. Louis* and the smaller propellers *Saucy Kate* and *Mercury* operated on both sections of the lake as well. In 1882, the largest

steamer to work on Lake Minnetonka – the sidewheeler *Belle of Minnetonka* – was launched and provided service on the Upper and Lower Lakes as well. The 1883 fleet was comprised of the *Belle of Minnetonka*, *City of St. Louis*, *Hattie May*, *Lotus*, *Saucy Kate*, and *Star* (the former *Mary*). A detailed 1883 schedule for these steamboats indicated the *Belle of Minnetonka*, *Saucy Kate*, *Lotus*, and *City of St. Louis* regularly traveled between the Upper and Lower Lakes on a timetable. The number of steamboat excursionists that year totaled more than 90,000 people between 1 June and 1 October for both the Upper and Lower Lakes. Also in 1883, a cottage industry also sprang up in Mound City with the ‘Lake Minnetonka Supply Boat’, owned and operated by T. B. Carman using the tug ‘76 (formerly owned by the firm of Hill & Acker/Northwestern Fuel Company). The boat made “regular trips around the lake to supply groceries, vegetables, canned goods, and about everything wished for, to camps, cottages and hotels”. Mr. Carman made it easy for tourists and weekenders to use his services because orders for the supply boat could be left in Wayzata, Mound City, or by flagging down the boat herself. A. Thompson ran a similar supply boat service out of Excelsior. In the Upper Lake’s West Arm, Deering Island was the home base for the steamer *Florence M. Dearing*, owned by Charles W. Dearing in 1890. George West and his son Ebenezer put together a small fleet of Lake Minnetonka craft and by 1891 they owned the propellers *Twin City*, *West Point*, and *Why Not?* Another small fleet owner was Captain James L. Hopkins, who operated the *Alert*, *Hawkeye/Reindeer*, *Juno*, and *Nina* beginning in 1892 (McGinnis 2010; Mowry 1884, 7; *Northwestern Tourist* 1883a, 1883b, 1890; *Tourist and Sportsman* 1881).

Of particular note for the maritime history and nautical archaeology of Lake Minnetonka, the career of Captain John R. Johnson stands out as exemplary for the development of Post-Contact Period waterborne commerce and maritime infrastructure that facilitated the establishment of urban centers around the lake. Johnson’s first job on Lake Minnetonka boat was as first mate of the *City of St. Louis*, later becoming her captain. Johnson purchased the six watercraft owned by the Lake Minnetonka Navigation Company, *Belle of Minnetonka*, the *City of St. Louis*, *Hattie May*, *Lotus*, *Minneapolis*, and *Saucy Kate* in September 1896. Captain Johnson also acquired a dock at Solberg Point and two others across the bay in Excelsior, thus establishing the Lake Minnetonka Transportation Company. Over the years Johnson owned many boats that he moored at his wharf on Solberg Point opposite Excelsior. Among them were: *Alert*, *Kate/Katie May/Saucy Kate*, *Hattie May/Tonka*, ‘76/*Katie Lillagar/Dagmar*, *Mayflower*, *Me Too*, *Rambler*, *Puritan*, *Vergie/Pilgrim*, the old Narrows Ferry, barge *Priscilla* (fashioned from a section of the *City of St. Louis*), *Plymouth*, *Cala Sayam*, *Buttinsky*, tug *Priscilla*, *Napoleon*, and *Miles Standish*. In 1905 Captain Johnson took a contract from the Twin City Rapid Transit Company’s (TCRT) to construct three ferries for use between Excelsior and the under-construction Big Island Amusement Park, the sidewheel steamers *Minneapolis*, *Minnetonka*, and *St. Paul*. In 1906 Johnson sold *Mayflower*, *Plymouth*, and *Puritan* to the TCRT and removed himself from the transportation business on Lake Minnetonka, concentrating on the operation of his Lake Minnetonka Dredging Company (LMDC). Johnson used the dredge *Napoleon* and tug *Priscilla* for the LMDC, adding numerous barges to his fleet during the first quarter of the 20th Century, as late as 1926. Interestingly, the Wayzata and Excelsior Steamboat Line (WESL) was formed as competition for Johnson’s LMTCo, a fleet comprised of *George/Excelsior*, *Victor*, *Fannie L.*, *Helen*, *Ypsilanti*, *Jaunita*, *Milliquata*, and *Comet*. In 1906 the WESL became the White Line Transportation Company, then the only competition for the TCRT and its new Streetcar Boats. In late 1906 the TCRT monopoly of the largest passenger steamers on the lake was complete with their acquisition of the *George/Excelsior* (*Excelsior Cottager* 1896; McGinnis 2010; *Minneapolis Journal* 1921; *Minneapolis Sunday Tribune* 1931; *Minnetonka Record* 1904, 1925d, 1926a-b, 1927).

### **Twin City Rapid Transit Company**

The coming of the TCRT streetcar line to Excelsior and the construction of six Streetcar Boats (also known as Express Boats) as public transportation in 1906 (*Como*, *Harriet*, *Hopkins*, *Minnehaha*, *Stillwater*, *White Bear*), combined with TCRT’s acquisition of the vessels mentioned above from the LMTCo and WESL, nearly eliminated any competition in waterborne transportation on the lake. The TCRT’s expansion of the streetcar line to Excelsior and the Streetcar Boat service that connected the south Lower Lake with the entirety of Lake Minnetonka provided quick and efficient transportation that facilitated daily commutes to the Twin Cities, Stillwater, and White Bear. By early May 1906 the TCRT had not completed the required 16 docks in order for their Streetcar Boats to operate fully, and only the *Minnehaha* and *Stillwater* had arrived from their Minneapolis shops ready for service. Therefore, a few independent boat operators persisted with their service in 1906,

including the *White Flyer* (a name briefly held by *George/Excelsior* before she was sold to the TCRT), *Wayzata*, *Acte*, *Vergie/West Point/Pilgrim* (captained by Al Bickford), *Hebe* (captained S. T. Johnson), *Detroit* (captained by A. J. Cornell), and *Victor*, owned and operated by Captain George Hopkins. Captain Hopkins had worked with Captain John R. Johnson throughout the years, starting out as an engineer on the *City of St. Louis* when Johnson was First Mate. He also captained *Saucy Kate* (1899) and *Plymouth* for Johnson, and purchased the *Victor* in 1906. During the Streetcar Boat years, even with the inclusion of a seventh Streetcar Boat (*Excelsior*) in 1915, Captain Hopkins operated the *Victor* until late 1925. In 1924, the TCRT began limiting their Streetcar Boat service by eliminating some stops around the lake and by 1925, *Como*, *Minnehaha*, *White Bear*, and the TCRT tug *Hercules* were decommissioned. The reason for this decline in scheduled boat service was the increased construction of roads around the lake and the increased ownership of cars. According to TCRT construction records, these four vessels were dismantled (machinery, seats, superstructure removed) in 1926 and their hulls sunk in Lake Minnetonka north of Big Island. By late June 1925, the Transit Supply Company, a subsidiary of the TCRT, placed the remaining four Streetcar Boats up for sale – with one taker. Captain Hopkins purchased the *Hopkins* for \$1,500, changed her trademark yellow hull to white, and renamed her *Minnetonka*. She operated as an excursion boat on Lake Minnetonka until 1949, when she was sunk near her sisters north of Big Island. No interest in the *Excelsior*, *Harriet*, and *Stillwater* was expressed and they were completely dismantled at the TCRT's shops in early 1928, their hulls never seeing the bottom of the lake (McGinnis 2010, 70, 253; *Minneapolis Journal*, 1899, 1925; *Minnetonka Record* 1906a; Construction Ledgers: Expenses, TCRT Records 1926, 1928).

The work boats of Lake Minnetonka - the tugs, barges, piledrivers, dredges, Streetcar Boats, ferries - allowed the area to become an extension of the Twin Cities through shoreline development, improvements, and an efficient and inexpensive transportation system. Further, the personal recreational watercraft wrecks listed above are also part of the economic and cultural development of the Lake Minnetonka area's urban centers. As numerous towns were established and nearly every parcel of land was purchased by non-public entities, creating an area with a large population density as vacation cabins and cottages were replaced by houses that were occupied year-around.

### **Associated Property Types**

In the late 19<sup>th</sup> Century and throughout the 20<sup>th</sup> Century, numerous vessels were constructed to maintain and improve the lake's shoreline, and for the purpose of public transportation to different points around Upper and Lower Lake Minnetonka. Many of these watercraft have been found on the lake bottom. Further, other types of vehicles and constructed structural components that served as lakeshore infrastructure have fallen through ice, abandoned on the ice after breakdowns, and been blown into the lake.

The wrecks are classified by their engine type and means of propulsion:

#### **1906 *Minneapolis* Wreck (21-HE-403)**

The sidewheel steamer *Minneapolis* and her sisters *Minnetonka* and *St. Paul* were constructed in 1906 by Captain John R. Johnson at Solberg Point for the Twin City Rapid Transit Company to act as a ferry for their customers traveling from Excelsior to the Big Island Amusement Park. The ferries were 109.00 feet long with a 35.00 foot beam, were double-ended with rudders at both bow and stern, and were propelled by sidewheels. After one season of disappointing performance, the ferries were lengthened to 142.00 feet long with a 39.00 foot beam, a design that was better suited to handling her heavy mechanical equipment. With the closing of the amusement park, *Minneapolis* was redundant and it was planned for her to be set ablaze in the hopes to make some last profit from her. She was burned on 8 August 1912, witnessed by a large crowd, with people traveling from the Twin Cities to watch the spectacle (Construction Records: Ledgers, TCRT Records 1905-1907; Merriman and Olson 2012a, 30-31; *Minneapolis Morning Tribune* 1912; *Minnetonka Record* 1906b, 1912a, 1912b; Olson 1976, 308).

**1906 Streetcar Boat *White Bear* Wreck (21-HE-281)**

**1906 Streetcar Boat *Como* Wreck (21-HE-397)**

**1906 Streetcar Boat *Hopkins/Minnetonka* Wreck (21-HE-396)**

The steam propeller Streetcar Boats were designed by Royal C. Moore and constructed under his supervision at the TCRT shops in Minneapolis, are 70.00 feet long, 14.83 in the beam, with a 5.00 foot draft. Their hulls were constructed of cypress with white oak frames, and their main deck seats were identical to those on the TCRT streetcar line, comprised of metal framed wicker seats. The upper decks had wooden benches and high railings, and the fleet was painted canary yellow like the trolley cars. The boats carried 150 horse power triple expansion steam engines, 250 psi water tube boilers, and were their propulsion depended on a 46 inch diameter propeller. *White Bear* and *Como* were sunk in 1926 (along with sister *Minnehaha* that was raised in 1980) after being partially dismantled. Prior to their scuttling, the superstructures of the boats were removed and their engines, boilers, and seats recycled. *Hopkins* was purchased by Captain George Hopkins and operated on the lake as *Minnetonka* until her sinking in 1949, with part of her superstructure intact. The *White Bear*, *Como*, and *Hopkins/Minnetonka* Wrecks have intact hulls, with bench bases, air scoops, cleats, chocks, bitts, and other fittings extant (Construction Records: Ledgers, TCRT Records 1926, 1928; Merriman and Olson 2012a, 32-27, 2015, 9-12; Olson 1976, 308).

**1906 Tug *Priscilla* Wreck (21-HE-404)**

The propeller steam tug *Priscilla* Wreck is 50.00 feet long and 15.00 feet wide. *Priscilla* was constructed in 1906 and owned by Captain John R. Johnson. For Johnson's Minnetonka Dredging Company, *Priscilla* towed the dredge *Napoleon* and other barges (see the Hopper Barge Wrecks Site below) for jobs around the lake. By the mid-1920s, *Priscilla* was converted to internal combustion and continued in service for the dredging company until the early 1950s. *Priscilla* has sturdy bollard placement both fore and aft, a robust gunwale, twin rubrail, and her cabin is missing. A short flight of stairs survives that leads into the hull amidships, where the cabin was located. A Danforth anchor is wedged into the wreck's rubrail, caught there from a surface boat some years ago (Merriman and Olson 2012a, 42-43, 2013a, 11-13, 2015, 12-13).

**1917 Tug *Hercules* Wreck (21-HE-398)**

The steam tugboat *Hercules* was constructed between December 1916 and May 1917 by the Twin City Rapid Transit Company at their Excelsior shop. The tug measured 50.00 feet long, 12.50 feet in the beam, and she was launched in early June 1917 for use in TCRT dock and boat maintenance. *Hercules* was sunk in 1926 with the *Como*, *Minnehaha*, and *White Bear*. Her superstructure and machinery were removed from her hull prior to her scuttling. The wreck is in expected condition, with bollards, deck, and gunwales intact; basically all that is missing from the wreck is her cabin, engine, and railings. The stern sits high enough off the lake bottom and it is possible to investigate the skeg and part of the rudder (Construction Records: Ledgers, TCRT Records 1926; Merriman and Olson 2012a, 37-38, 2015, 14-15; Olson 1976, 308).

**1925-1926 Hopper Barge Wrecks (21-HE-441)**

Two 40 foot-long Hopper Barge Wrecks, one upright and one capsized, that comprise site 21-HE-441 are sisters of the same design and size: 44.60 feet long, 16.50 feet in the beam, with a 4.75 foot depth of hold. The decks and bottoms of both wrecks are planked athwartships and the ends of the vessels are raked with watertight compartments. Large metal cleats survive on the upright barge, two on one end and one amidships. An amidships deck coaming borders four open deck compartments that are separated by bulkheads topped with metal beams. Each of the four compartments has an outer hull flap that is hinged at the top, below the gunwale and coaming. Two windlasses are attached to the deck next to the compartments, with chains wound around them, that were used to open and close the side flaps. The common form of hinged flaps used in hopper barge construction beginning in the late 1800s – to dispose of dredge spoil out of the hull – were located on the bottom of the vessel, not the side. This side flap design is unique to these hopper barges and represents an innovation developed by Captain John R. Johnson, their designer and builder. The barges were constructed by Captain Johnson during the winter of 1925-1926 and were used in Excelsior Bay and other parts of Lake Minnetonka where the dredging of the lake bottom

created or deepened channels, removed underwater obstructions or deepened the lake in a given area (Merriman and Olson 2014b, 8-14; *Minnetonka Record* 1925a-c).

### **St. Albans Bay Wreck (21-HE-400)**

The St. Albans Bay Wreck is a wooden piledriver/dredge of substantial construction and size. She is 70.00 feet long, 26.00 feet in the beam, and her depth of hold is 5.00 feet. There is an extendable leg, known as a spud, located at the stern of the wreck. The wreck is in exceptional condition and is a rare in the archaeological record. Captain John R. Johnson's last known dredge was built over the winter of 1925-1926 and was described as "26 feet wide, exclusive of spuds, and 70 feet in length. It will have a freeboard of five feet", although the newspaper misused the term 'freeboard' (Merriman and Olson, 2012a, 39-42, 2013a, 14-16, 2015, 15-16; *Minnetonka Record* 1925d).

### **1919-1925 Ford Model T Doodlebug (21-HE-bm)**

A doodlebug is a car or truck converted into a tractor. The doodlebug on the bottom of Lake Minnetonka was converted from a Ford Model T car or truck dating to 1919-1925. The doodlebug has a worm gear axle that would have been incorporated into a Model T truck, but the body of the tractor is shorter than either a car or truck. It measures 6.00 feet between the front and rear axles and during the conversion, the worm gear axle could have been added to a car frame. On either side of the tractor a support beam extends from the front of the vehicle to the rear axle. It has two dual rear tires with chains on the inner set, indicating it required traction on ice, and the left rear outer tire is missing. The doodlebug may have had a belt attached to the rim of the left rear wheel that was probably connected to a circular saw that was used to cut wood. Three of the rubber tires have survived and the spokes of the wheel rims are wood. The rubber tire of the left front wheel is missing and the wheel is sitting at an angle, suggesting a broken tie rod resulting in an inability to effectively steer the vehicle. The broken tie rod may have caused the tractor's owner to abandon it on the ice. Diagnostic attributes of the doodlebug are the cursive Ford logo embossed on the grease caps for the wheel bearings. The long steering column places the driver's seat above the rear axle. The steering wheel is present but has been knocked off the steering column and has slid down it, landing near the battery and on top of the transmission. The tractor's seat is no longer extant. It has a four-cylinder engine with four spark plugs and four ignition coils mounted next to the cylinder head on the left side. A parking brake lever is found on the ride side of the transmission at the rear end of the engine and the radiator, normally mounted in an upright position in front of the engine, has fallen forward and lies on the lake bottom. The carburetor, exhaust manifold, and starter motor are present on the right side of the engine, while a six-volt battery for the starter motor is behind the engine next to the transmission. Starter motors were introduced into the Model T in 1919. This attribute, combined with the presence of the wooden spoke wheels that were replaced by steel examples in 1926, indicates that the original Model T before its conversion into a Doodlebug was constructed between 1919 and 1925 (Cubel and Cubel 2013; Ford Motor Company 2014; Merriman and Olson 2014b, 24-26).

### **1936 Plymouth Sedan**

A 1936 Plymouth 4 Door Sedan landed on the bottom of Lake Minnetonka upside down. The body of the car is almost completely crushed, with the exception of the passenger side quarter window in the C pillar, rear 'suicide' (rear hinge) door, and front door, both complete with windows. The underside of the car is intact and the frame, axles, leaf springs, running boards, oil pan, exhaust system with muffler, battery box, gas tank, drive shaft, and rear wheel drive axle are clearly visible. The front and rear bumpers, as well as the right rear fender, are still attached to the car's frame. A small right side round red taillight survives and is attached to a spacer that has fallen away from the right rear fender. The right front fender is detached and lying on the lake bottom near its original position with a headlight attached to a spacer that is located between the fender and the hood of the car. The radiator is in place and the vehicle's tall and narrow grille is in front of it. The grille's center section has fallen away and rests on the lake bottom and the entire grille has loosened from its original place behind the front bumper. The Plymouth has 4 intact, but compressed, white wall tires. The site is 17.00 feet long and 9.70 feet wide (Merriman and Olson 2014b, 32-34).

### **1955 Mercury Monterey 4 Door Sedan**

The 1955 Mercury Monterey 4 Door Sedan is 17.00 feet long and 5.00 feet wide. The car's sinking was the result of a 'Dunk the Clunk' contest. Beginning in 1957, the Wayzata Lions Club sponsored a fundraiser to benefit Camp Courage and other programs. A car was placed on the lake ice in Wayzata Bay in March and 'guesses' were taken as to the date and time the 'clunk' would go down. None of the makes or models of the cars are recorded in newspapers, but some photos of the yearly clunks were published – but none of these vehicles are the 1955 Mercury Monterey. In mid-March 1961 it was recorded that Melvin Peterson's 'clunk' was waiting to be dunked on Wayzata Bay. In 1967, it was mentioned that the Lions Club would retrieve the 'clunk' from the lake bottom but in previous years there was no mention of retrieval. In 1968 the car had a line attached to it for easier pull-out as seen in the newspaper photo. Several hundred up to 1,150 people (in 1963) guessed the dunking date yearly, and it was reported consistently that "clunk watchers" eating at Hart's Cafe busily made yearly predictions (Ford Motor Company 1955; Merriman and Olson 2013a, 47-51; *Minnetonka Herald* 1957a-c, 1959, 1960a-c, 1961, 1963a-b, 1964, 1965, 1966, 1967; *Minnetonka Sun* 1968).

### **1974 White Chevrolet Caprice Classic Two Door Coupe**

The 1974 White Chevrolet Caprice Classic Two Door Coupe is overturned with its grill, hood, windshield, and passenger compartment roof resting on the lake bottom and its trunk suspended in the water column. The site is 18.00 feet long by 6.00 feet wide. The car has a thick pillar in the 'B' section of the car, rear quarter 'opera' windows, low placement and discontinuous side trim molding, fleur-de-lis emblems on its pillars, and taillights above the bumper- all diagnostic attributes of the 1974 model. The car also has a 'Caprice Chevrolet' emblem on its trunk. The tires have compressed because of the water pressure and the vehicle shows some signs of rust. The rear license plate is readable, 249 CTJ, and according to the Hennepin County Sheriffs Water Patrol the number has been re-assigned to another vehicle. The latest year validation sticker dates to May 1989 (Merriman and Olson 2013b, 50-52).

### **1981-1984 Echo Bay Metal Barge Wreck**

The Echo Bay Metal Barge Wreck is 28.00 feet long, 6.65 feet in the beam, is constructed of welded metal with wood fittings, and there are metal cables attached both fore and aft, with the forward cable snapped. She is significantly exposed off the bottom of the lake and has a scow-style raking bow and transom stern. The barge was built and used by the Minnetonka Portable Dredging Company of Shorewood and sank between 1981 and 1985. The barge was being towed toward Lafayette Bay in high wind and waves. The barge was swamped, the towing cables snapped, and she went to the bottom of the lake (Merriman and Olson 2013a, 43-45).

### **Boat Lift**

The Boat Lift measures 9.00 feet by 7.60 feet, sits 10.50 feet off the lake bottom. It is constructed of steel and has a large wheel. The design of the lift indicates it is a vertical type with standard (short) boat bunks and a manually operated winch drive train to raise and lower a watercraft. The lift probably detached from a nearby dock during high winds or it may have been intentionally scuttled. The boat lift's canopy is missing.

### **Boat Canopy Frames**

Two Boat Canopy Frames have been identified in Lake Minnetonka. One measures 14.10 feet by 8.00 feet, sits 5.00 feet off the lake bottom. The second Boat Canopy Frame is 8.00 feet by 3.50 feet, sits 10.20 feet off the lake bottom. They are both constructed of steel. The frames probably detached from nearby docks during high winds or they may have been intentionally scuttled. There are no boat lift mechanisms evident, an attribute often associated with boat canopy frames, and the canopy is missing. The design of both frames is flat on the top, not peaked like other, larger frames (Merriman and Olson 2015, 28-29).

### **Boat Ladder**

The Boat Ladder is comprised of metal, plastic, and rubber with small arms that would hold it away from the hull of a boat while curved arms (currently buried) would settle over a boat's gunwale (Merriman and Olson 2015, 29).

### **Buoy Anchors**

The Buoy Anchors are two large concrete pieces, one with a metal cable wrapped around it held together by a clevis. This object has no zebra mussels attached to it and it measures 5.50 feet long by 2.20 feet wide and stands 1.60 feet off the lake bottom. The other concrete chunk is completely covered in the invasive species and measures 6.20 feet long, 2.10 feet wide, and stands 1.90 feet off the bottom; It cannot be determined if it has a metal cable wrapped around it. The composition of the site is an issue; it does not match the sonar image. The acoustical signature indicates that there is one object at the site, not two different pieces that are at angles to each other. It is possible that the concrete piece with the cable and without the zebra mussels is 'newer' than the other piece, and was only dropped onto the lake bottom since September 2011 when the sonar image of the site was recorded (Merriman and Olson 2015, 29-30).

### **Polaris Indy 500 Classic Snowmobile**

The Polaris Indy 500 Classic Snowmobile is a 1990 model and its primary color is blue. All of its dials, windshield, and seat are intact. The date of sinking is unknown, but it went through thin ice prior to September 2011 when it was recorded on sonar. The site measures 8.40 feet long by 3.60 feet wide (Merriman and Olson 2015, 31-32).

### **Red Dodge Ram Laramie SLT Pickup Truck**

The Red Dodge Ram Laramie SLT Pickup Truck was created recently, sometime before November 2011 when the first sonar image of it was recorded. The truck has an extended cab and the windows were open when it fell through the ice. It is substantially buried in silt and neither of its license plates can be read. Its year of manufacture cannot be ascertained at this time. The site measures 19.70 feet long by 6.00 feet wide (Merriman and Olson 2015, 32-33).

### **Carpeted Wooden Dock**

The Carpeted Wooden Dock is 20.50 feet long and 4.50 feet wide, the carpet is loose in places, and has a metal loop on one end. The dock likely loosened from another dock section or the shoreline during a period of high water or similar event, probably in the early 2000s (Merriman and Olson 2014b, 47).

### **Metal Pole and Electrical Box**

The Metal Pole and Electrical Box was likely detached from a dock. The pole measures 2.00 inches in diameter and 17.50 feet long, while the box is 2.50 by 1.60 feet (Merriman and Olson 2015, 33).

### **Metal Pipe**

The Metal Pipe is associated with part of a tree. The sonar image of this anomaly suggested it was a buried structure, like a barge or a dock. In reality, the metal pipe was sitting at an angle over part of a tree and the acoustical shadow looked like a long rectangular object was buried at this location. The pipe itself appears to be from a dock section (Merriman and Olson 2015, 33-34).

### **Metal Box**

The Metal Box measures 2.50 by 2.00 feet. The metal is degraded and might have fallen off a watercraft (Merriman and Olson 2015, 34).

### **Small Metal Drum**

The Small Metal Drum Site measures 1.70 feet in diameter and stands 2.0 feet off the bottom of the lake. Its contents and reason for disposition are unknown (Merriman and Olson 2015, 34-35)

### **The Old Man of St. Albans Bay**

The Old Man of St. Albans Bay is a cut log - probably a piling for a dock - standing upright on the lake bottom, suspended in the water column. The site name is in deference to "The Old Man of the Lake", a log that has been floating upright in Crater Lake in Oregon since at least 1896. The Oregon example sticks out of the water, while Lake Minnetonka's Old Man does not break the surface and is not a hazard to navigation. It measures 10.70 feet tall and 1.30 feet in diameter (Merriman and Olson 2015, 35).

## SECTION F. ASSOCIATED PROPERTY TYPES

### Wrecks and Submerged Cultural Resources of Lake Minnetonka, Minnesota (BC 9500 - AD 1965)

The property types in this MPDF include wrecks - sunken boats or sections of boats - and other types of maritime sites identified on the bottom of Lake Minnetonka dating from prehistory to the present. The date limitation of AD 1965 reflects the 50 year threshold a site must meet to be considered an archaeological property in Minnesota, unless a Criteria Consideration G argument is made for exceptional significance. For the purposes of NRHP nomination and this MPDF, wrecks are categorized as structures because they are "functional constructions made usually for purposes other than creating human shelter". Sites are defined as the "location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure". A wreck *could* be considered a site for the purposes of NRHP nomination if the location of sinking marks a significant event - in this case, the sinking itself, or if there is a substantial debris field surrounding a fragmented wreck. Other property types in this MPDF are classified as objects, defined as submerged cultural resources that "are relatively small in scale and simply constructed [that] may be movable [and is] associated with a specific setting or environment". In consideration of the known wreck types, including two sets of 'sisters' and other wrecks associated with them on the bottom of Lake Minnetonka, the designation of a district is also a possibility in regards to NRHP nominations. A district "possesses a significant concentration, linkage, or continuity of sites, buildings structures, or objects united historically or aesthetically by plan or physical development". Several considerations for the establishment of a district must be taken into account: its importance as a unified entity, its historical, archaeological, engineering, or cultural importance, the type of features that comprise it, and its geographical boundaries and the possibility it is discontinuous (NPS 2002, 4-6).

#### ***Construction Material of Wrecks in Lake Minnetonka: Structures and Sites***

The common construction materials used in the creation of the watercraft that become wrecks on the bottom of Lake Minnetonka are grouped into three categories: wood, metal, and fiberglass. Previously, in *The Shipwrecks of Minnesota's Inland Lakes and Rivers (9,500 B.C. to A.D. 1945)* (SMILR) MPDF, types of wrecks that could be found in Minnesota were placed into two broad categories:

Group 1: wind-, water-, hand-, or horse-powered vessels (bark canoes [Indian, express/light, north, bastard, Montreal], wood canoes [pirogues/dugouts, strip], skin boats [skin-covered frame canoe, bull boat], feluccas/longboats, bateau [bateau plat/Chaland, Mackinaw/Albany, York, Sacking], keelboats [ordinary, barge], flatboats [private, excursion/pleasure, wanigans], rafts [simple floater, wanigan, headwork, log/lumber], ferries, pontoon bridges/wharves, rowboats, and miscellaneous vessels [various sailboats, sculls, pontoons, kayaks, glass-bottomed boats, ice boats, ice yachts, and others])

Group 2: fuel powered vessels (packets, tramp steamers, log rafters/raft boats/towboats, bowboats/variants [alligators], channel maintenance vessels, launches/variants, excursion vessels, ferryboats, miscellaneous vessels (Hall, Newell, and Birk 1998, F1-7))

The development of two broad wreck categories based on propulsion is viable, but the sub-categories constructed to describe watercraft types based on function in the SMILR MPDF are not useful in terms of defining wrecks for NRHP nomination for Lake Minnetonka.

For Lake Minnetonka, recognized wrecks and wrecks identified in the future will be described and classified by their hull construction material, their engine type, means of propulsion, and hull configuration. The function or functions of a wreck will be described in terms of the life history of the boat, but it is not a defining attribute that



will place a wreck into its type.

### **Wooden Wreck Construction**

A Lake Minnetonka wreck will be defined as being constructed of wood if the hull (bottom and sides) of the vessel is comprised of a log (dugout), tree bark (most often birch bark), wood planks attached end-to-end (carvel), overlapping wood planks (lapstraked or clinker), or if the hull is composed of marine plywood laminates (thin pieces of wood glued together). In some instances, a wooden-hulled wreck may have major metal or fiberglass components or attributes: deck, foredeck, gunwale, frames, or futtocks. Sometimes wooden-hulled boats are covered in fiberglass for water-proofing purposes or in metal sheathing for added hull protection. These wrecks will still be defined as wooden structures for NRHP nomination consideration. Beyond a wooden Lake Minnetonka wreck's hull construction material, the vessel was put together with metal fasteners, spikes, nails, or a combination of these materials. Other attributes associated with some wooden wrecks - and made of metal, fiberglass, plastic, rubber, glass, and other materials - include steering wheels, dashboard dials, seats, benches, superstructure, galley equipment, bathroom equipment, motors, engines, propellers, gas lines, gas tanks, windshields, window and porthole glass, navigation lights, cleats, chocks, step pads, commercial machinery, straps, rods, and a variety of other objects. In describing wooden wrecks for NRHP consideration, the composite nature of the structures must be recognized and defined.

### **Metal Wreck Construction**

A Lake Minnetonka wreck will be defined as being constructed of metal if the hull (bottom and sides) of the vessel is comprised of metal pieces (aluminum, steel) welded or riveted together or if the primary means of flotation for the vessel was pontoons (aluminum, steel) constructed of drums or composed of metal pieces welded or riveted together. In some instances, a metal-hulled wreck may have major wood or fiberglass components or attributes: deck, foredeck, gunwale, frames, or futtocks. These wrecks will still be defined as metal structures for NRHP nomination consideration. As with wooden-hulled wrecks, Lake Minnetonka metal wrecks may have other attributes associated with them made of wood, fiberglass, plastic, rubber, glass, and other materials in the same configurations as those listed above. In describing metal wrecks for NRHP consideration, the composite nature of the structures must be recognized and defined.

### **Fiberglass Wreck Construction**

A Lake Minnetonka wreck will be defined as being constructed of fiberglass if the hull (bottom and sides) of the vessel is comprised of a formed piece or pieces of fiberglass. In some instances, a fiberglass-hulled wreck may have major wood or metal components or attributes: deck, foredeck, gunwale, frames, or futtocks. These wrecks will still be defined as fiberglass structures for NRHP nomination consideration. As with wooden and metal-hulled wrecks, Lake Minnetonka fiberglass wrecks may have other attributes associated with them made of wood, metal, plastic, rubber, glass, and other materials in the same configurations as those listed above. In describing fiberglass wrecks for NRHP consideration, the composite nature of the structures must be recognized and defined.

### ***Nature of Submerged Cultural Resources in Lake Minnetonka: Objects***

The Minnesota-wide SMIRL MPDF did not consider 'other' submerged cultural resources - that are not wrecks - that could be identified on the bottom of the state's lakes and rivers. This MPDF considers the known objects identified on the bottom of Lake Minnetonka, with a list of potential objects that will likely be located in the future. The nature of the variety of objects identified does not lend to a definition of an object's construction material. However, objects are most often composite in nature, and this attribute must be recognized and defined.

### ***Significance***

This Multiple Property Documentation Form (MPDF) is intended for the assessment of wrecks and submerged cultural resources identified on the bottom of Lake Minnetonka to determine the level of their historic and archaeological significance. The eligibility and level of significance of identified properties will be evaluated

using the four NRHP criteria:

- A) Property is associated with events that have made a significant contribution to the broad patterns of our history
- B) Property is associated with the lives of persons significant in our past
- C) Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction
- D) Property has yielded, or is likely to yield, information important in prehistory or history

The majority of structures and objects on the bottom of Lake Minnetonka are most likely to qualify for listing in the NRHP under Criterion C or D. Even with the limited geographical region that is being considered in this MPDF - Lake Minnetonka itself - identified wrecks and other submerged cultural resources - or groups of wrecks or resources - could also be considered for NRHP nomination under Criterion A. Certain wrecks - or groups of wrecks - could be considered under Criterion B if there is a strong association with a significant person. Specific property types - those already identified on the lake bottom and those that may potentially be located - and their construction attributes that should be considered during the NRHP evaluation process are presented below.

**Criterion A:** Property is associated with events that have made a significant contribution to the broad patterns of our history

Wrecks of vessels that were an integral part of the economic viability, development and success of the Lake Minnetonka area in the Post-Contact Period can be eligible for the NRHP under Criterion A. For example, one of the known properties, the Wayzata Bay Wreck (21-HE-401), was a link in the chain of the area's systematic deforestation during the 1870s as well as a cog in the movement of cargo across the lake for transport to the Twin Cities. In the early 20th Century, the seven Streetcar Boats - *Como*, *Excelsior*, *Harriet*, *Hopkins*, *Minnehaha*, *Stillwater*, and *White Bear* - the three sidewheel ferries - *Minneapolis*, *Minnetonka*, and *St. Paul* - and the independently operated *George/Excelsior*, *Saucy Kate*, and dozens of other boats - systematically moved people around the lake for recreation and commuting. The wrecks *Como* (21-HE-397), *George/Excelsior* (21-HE-399), *Hopkins* (21-HE-396), *Minneapolis* (21-HE-403), *Saucy Kate* (21-HE-420), and *White Bear* (21-HE-281) are on the lake bottom and as a group, they are physical representations of the mass transit system that developed in the United States beginning the late 19th Century. Further, the tug *Hercules* Wreck (21-HE-398) that worked as the support vessel for the Streetcar Boats and assisted in the maintenance of the boat's docks, could be considered part of this system. Therefore, under certain contexts with supporting background research, Criterion A applies to structures, objects, or districts to the NRHP.

**Criterion B:** Property is associated with the lives of persons significant in our past

Lake Minnetonka's maritime history is associated with several significant people, recognized both state-wide and locally, for their contributions to the lake area's deforestation, waterborne transportation system, settlement and economic development during the Post-Contact Period. Locally to Lake Minnetonka, boat builder, operator, and owner Captain John R. Johnson arguably influenced not only the physical nature of the lake, but its economic history through waterborne transportation. Johnson literally 'shaped' much of the lake's current physical appearance through his dredging company's activities from the 1890s to the 1930s (actually to the present since his company still exists under a different name), digging and enlarging channels, deepening bays, claiming swampland, rip-rapping. During his career, Johnson owned, constructed, or operated these vessels on Lake Minnetonka: *'76/Katie Lillagar/Dagmar* (initially constructed and owned by Hill's Northwester Fuel Company), *Alert*, *Belle of Minnetonka*, *Buttinsky*, *Cala Sayam*, *City of St. Louis*, *Hattie May/Tonka*, *John Alden*, *Lotus*, *Mayflower*, *Me Too*, *Miles Standish*, *Minnetonka*, *Napoleon*, the *Narrows Ferry*, *Plymouth*, barge *Priscilla*, *Puritan*, *Rambler*, *St. Paul*, and *Vergie/Pilgrim*, and the wrecks: the *Hopper Barge Wrecks* (21-HE-441), *Minneapolis* (21-HE-403), tug *Priscilla* (21-HE-404), *Saucy Kate* (21-HE-420), and the *St. Albans Bay Wreck* (21-HE-400). Another significant boatwright on Lake Minnetonka was Royal Moore, founder and owner of Moore Boat Works in Wayzata. Moore's enterprise constructed hundreds of small and large boats using Moore's designs - most notably the Streetcar Boats referenced under Criterion A above. As the waterborne portion of the public transportation

system on Lake Minnetonka for nearly 20 years between 1906 and 1925, the Moore's Streetcar Boats provided a service integral to the lake's residents in a time when roads were often not maintained or non-existent. Evaluation of Criterion B significance must include comparison with related properties that are also associated with the significant person. The focus of Criterion B significance relates to the person's productive life, and in that sense, submerged wrecks of vessels designed or operated by locally significant people could be eligible for the NRHP due to that association. Conversely, the Wayzata Bay Wreck (21-HE-401) was constructed and operated under a commercial enterprise partially owned by James J. Hill, whose business dealings extended throughout Minnesota to the East and West coasts and into his homeland of Canada. This wreck is eligible for the NRHP under Criteria C and D (as demonstrated in nomination that accompanies this MPDF), but Criterion B does not apply in regard to Hill, because the James J. Hill House in St. Paul (a National Historic Landmark) clearly has more direct association with Hill's productive life.

**Criterion C:** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction

Many wrecks from the Pre-Contact, Contact, and Post-Contact Periods that have or will be identified on the bottom of Lake Minnetonka may be considered for NRHP nomination under Criterion C. For example, if a dugout canoe or a group of dugouts were identified *in situ*, that structure or district would be eligible for NRHP nomination based due to the rarity and importance of that vessel type and method of construction in Minnesota. The Wayzata Bay Wreck (21-HE-401) is eligible for the NRHP under this criterion because it exhibits the distinctive characteristics of its type - a model barge. This structure is the only one of three known model barge wrecks in the United States and it is the only complete one. Other wrecks that could be considered for NRHP nomination under Criterion C are the Streetcar Boats with their distinctive torpedo stern design, and as the work of Royal Moore. The smaller wreck types - rowboats, sailing boats, and motor boats - identified on the lake bottom could be considered for NRHP consideration depending on their construction characteristics (clinker/lapstrake hulls, wineglass stern, light frame and futtock design) and condition. These small vernacular craft have not survived in the historical record, regardless of their construction in great numbers on Lake Minnetonka. These vessels reflect the skill of the boat builder, and in some ways appear to be artistic constructions - the lattice work of thin frames, futtocks, stringers, and keelsons in the inner hull of these wrecks are intricate and carefully constructed.

**Criterion D:** Property has yielded, or is likely to yield, information important in prehistory or history

Many properties identified on the bottom of Lake Minnetonka could be considered for NRHP nomination under Criterion D during the Pre-Contact, Contact, and Post-Contact Periods. The identification of prehistoric vessels - dugouts and bark canoes - is of clear importance and holds great potential for information regarding these rare vessels types. For the Post-Contact Period, for example, boat-building in the United States was most often a skill transferred through the generations by apprenticeships. This 'learning on the job' often facilitated the building of boats without the use of construction plans - or the plans do not survive in the historical record. This holds true for 11 of the 12 currently known large wooden wrecks (40 feet long and longer) that lie on the bottom of Lake Minnetonka. The plans for the one exception - the tug *Hercules* (21-HE-398) - are on file at the Minnesota Historical Society (MNHS). It must be mentioned that the plans for the Streetcar Boat *Excelsior*, the slightly larger sister to the original 6 Moore-constructed boats, also survive at the MNHS and are available for reference in consideration of the 3 Streetcar Boats on the lake bottom. The end result of this lack of documentation in the historical record for the preponderance of Lake Minnetonka's submerged cultural resources is that the wrecks - the physical evidence - are often the only record that survives of these unique vessel types that were built on the lake or in communities not far from the lake. Minnesotans were designing and building boats for themselves and other Minnesotans on the largest lake in the Twin Cities. The physical remains of these structures, from prehistoric dugout canoes to utility boats of the 1950s, will yield information important information that would otherwise be unknown or lost pertaining to our shared maritime history.

The seven aspects of integrity are important considerations in evaluation of historic properties are discussed here, relative to submerged historic properties of Lake Minnetonka. Eligible properties retain a majority of the aspects of integrity.

## **Materials**

As detailed above, wrecks are constructed of wood, metal, and fiberglass but often are composite structures that also have other materials attached to them that are integral or important for their operation, including rubber, glass, plastic, and other substances. Objects can be constructed of a variety of materials, including wood, metal, fiberglass, plastic, rubber, or combinations of these materials. Districts can also be comprised of wrecks or objects that are built of a variety of materials. For submerged cultural resources to qualify for the NRHP, significant attributes that are integral to the structure of the property must be present. In the case of wrecks, these attributes include outer hull planking, frames, futtocks, the keel, keelsons, stringers, gunwales, and other structural components.

## **Location**

The location of wrecks, objects, and districts on the bottom of Lake Minnetonka that could be considered for NRHP nomination are positioned where they sank. The wrecking process may have begun in another area, but the final resting place for the submerged cultural resource is the wreck's, object's, or district's location. If the resource is moved or is removed from Lake Minnetonka, it does not qualify for listing on the NRHP. Therefore, the Lake Minnetonka North Arm Dugout Canoe (21-HE-438) removed from the lake in 1934 and the Streetcar Boat Minnehaha, removed from the lake in 1980, are important artifacts, but they are not eligible for the NRHP.

## **Setting**

The wrecks, objects, and districts currently identified, or recognized in the future, that are associated with this MPDF should all have integrity of their setting due to the nature of the lake bottom. Lake Minnetonka has a variety of different bottom contours, textures, and depths. Therefore, a submerged cultural resource's setting will be a combination of its water depth (that can fluctuate depending on rain amounts and dam flow), geographical location (GPS numbers), and lake bottom conditions. This last aspect of setting varies depending on the geographic location of the resource. Sediment builds up in certain areas of the lake at different rates; this build-up is contingent on the amount and speed of water flow through an area. For example, the consistency of the lake bottom in the North Arm and West Arm is extremely soft, even swamp-like; wrecks sink into the thick matrix with resulting low visibility. Crystal Bay, Gideon Bay, Lafayette Bay, and large portions of the Upper lake have soft bottom areas, but not to the extent that wrecks and resources are completely covered in matrix or sink excessively into the silt. Wayzata Bay and a large section of the Lower Lake north of Big Island have a somewhat soft bottom, but sediment build-up is slow and wrecks are buried slowly. The extremely soft areas like West Arm are offset by lake bottom conditions that include hard-packed sand, often with large areas of gravel and small to large-sized boulders strewn throughout, like northeast of Big Island and the southeastern corner of Wayzata Bay. These hard-packed areas provide the best visibility during wreck site investigations in Lake Minnetonka.

## **Association**

An established association between a wreck, object, or district on the bottom of Lake Minnetonka, and a person, company, group, activity, or event is important when defining a structure's type, age, and historical and archaeological significance. In the case of wrecks, an association with an important person or commercial enterprise at the level of ownership is often not a strong enough level of significance to justify NRHP nomination or listing. In contrast, the association of a person at the level of vessel design or construction can be an aspect of nomination for Lake Minnetonka properties.

## **Feeling**

In association with a Lake Minnetonka wreck, feeling is the ability of the structure to remind people of its historical context during the vessel's working life or an event that resulted in its sinking; for example, a

memorable storm or collision. Another feeling that Lake Minnetonka's submerged cultural resources can suggest is the generational continuity of boat building and operations that the wrecks can represent, particularly those associated with Captain John R. Johnson and Royal Moore.

## Workmanship

In terms of boat building, the quality of workmanship and skill of the boatwright is often indicative of the sturdiness of a vessel and its survival on the bottom of Lake Minnetonka after the wrecking process. A well-built boat - if it is constructed of quality materials like hard woods, sturdy metal, or thick fiberglass - can survive for extended periods of time on a lake bottom. Lake Minnetonka provides a particularly good environment for wreck survival due to its nature - cold fresh that is often relatively deep. This situation is particularly evident in the condition of the Wayzata Bay Wreck (21-HE-401). The completeness of this wreck is a showcase for the talent of the boatwright that constructed this vessel. After over 130 years on the lake bottom, the structure's details and construction attributes are evident throughout the vessel, a testament to its builder and an appropriate choice of materials. The same can be stated about the builder of the Hopper Barge Wrecks (21-HE-441), St. Albans Bay Wreck (21-HE-400), *Saucy Kate* Wreck (420), the Streetcar Boat Wrecks (21-HE-281, 21-HE-396, 21-HE-397), the *Hercules* Wreck (21-HE-398), the *Priscilla* Wreck (21-HE-404), and the *George/Excelsior* Wreck (21-HE-399). In those cases where boats were constructed of inferior wood, their deterioration on the lake bottom is nearly assured unless the wrecks are buried rather quickly in silt, or the planks they are constructed from is thick. The fragmentary nature of small wrecks such as the Crystal Bay Rowboat Wreck (21-HE-457), Maxwell Bay Rowboat Wreck (21-HE-469), St. Louis Bay Rowboat Wreck (21-HE-422), and the Sailing Boat Wreck are not a reflection of the talent of the boat builder but a reflection of the wood quality that was used in their construction and the thinness of several wreck components. In consideration of small wrecks for NRHP nomination, these conditions that seemingly suggest poor workmanship must be considered in the evaluation process and the data discarded if appropriate.

## Design

The design of Lake Minnetonka wrecks, objects, or the components of districts is reflected in the form the constructed structure took during its working life through conscious choices of the boat builder. For example, the design of the Wayzata Bay Wreck (21-HE-401, model barge with double pointed ends), Hopper Barge Wrecks (21-HE-441, hopper barges with distinctive side flaps), the Streetcar Boat Wrecks (21-HE-281, 21-HE-396, 21-HE-397, torpedo sterns), *George/Excelsior* Wreck (21-HE-399, sternwheeler), *Minneapolis* (21-HE-403, sidewheeler), and St. Albans Bay Wreck (21-HE-400, scow-ended piledriver/dredge) are determiners of their types. Elements of design may be lost during or after the wrecking process, however. Beyond being a type determiner, design is often reflected in the function that Lake Minnetonka boatmen required of a given vessel in the case of commercial boats like piledrivers, dredges, and barges.

## Registration Requirements

Lake Minnetonka's wrecks and other submerged cultural resources are most likely to qualify for NRHP nomination and listing under Criteria C and D in relation to their historical significance, integrity in terms of condition, their distinctive designs, and their type. Arguments for eligibility can be made under Criteria A and B in a few cases and in those instances, the property will also be eligible for listing under either Criteria C or D. Below is a breakdown of the three main property types that have been identified on the bottom of Lake Minnetonka, including variations in the design and construction of these wood, metal, and fiberglass wrecks that date to the Pre-Contact, Contact, and Post-Contact Periods. Further, submerged cultural resources that classify as objects for NRHP consideration are also categorized, with suppositions as to the identification of other object types in the future.

## PROPERTY TYPES: WRECKS

In describing and defining the following property types, it is understood that nearly all of these sites are consist of composite artifacts. The three main divisions below - wood, metal, and fiberglass - represent the primary

construction material of the property or artifact as described above.

## Wooden Properties: Wrecks

**W1. Wooden Canoes.** At this point, only one wooden canoe has been discovered in Lake Minnetonka. The Lake Minnetonka North Arm Dugout Canoe (21-HE-438) does not qualify for nomination to the NRHP due to its loss of context (Merriman and Olson 2014a, 9-12). As for propulsion, all canoes are paddled, with the paddlers facing forward; if a paddle was found associated with a canoe in an archaeological context, it would be an unusual and significant discovery. It is likely that other ancient canoes exist in Lake Minnetonka, which hopefully will be discovered in the future.

### W1. Identified Wreck Designs:

#### 1. Dugout

Because of the rarity of Pre-Contact, Contact, and Early Post-Contact dugout canoes in Minnesota (8 known), a submerged canoe located in Lake Minnetonka in the future and left *in situ*, would be eligible for the NRHP under Criteria C and D. Dugout canoes studied to date indicate there are cultural and geographical attributes evident in artifact construction that are also temporally linked. These attributes include canoe end (bow and stern, if differentiated, and the degree of rounded or sharpness) design, bottom hull design (rounded or hard chines), and tool marks (stone or bone tools compared to historic chisels) on the inner and outer hulls (Merriman and Olson 2014a, 29-30). A submerged canoe such as this would provide important information about the history and engineering a rare vessel type.

### W1. Potential Wreck Designs:

1. Bark hull, wood frames
2. Planked hull, wood frames

Wooden framed bark-hulled canoes were used in Minnesota by the late 1600s (Wheeler et al 1975, 2-4) and many pictorial representations of these craft exist in the historical record. Contact and Post-Contact Period bark-hulled canoes, if found in Lake Minnetonka, would have been constructed by Native Americans. These artifacts would be eligible under Criteria C and D due to their distinctive construction attributes, and the lack of current archaeological information about them. Any bark canoes located in Lake Minnetonka would yield significant information pertaining to Minnesota's maritime history. No complete Minnesota bark canoes from archaeological contexts have survived, although a thwart and caprail were recovered near Fort Charlotte near the Canadian border (Wheeler et al 1975, 85-86). There is also the potential to locate planked canoes from the Post-Contact Period on the bottom of Lake Minnetonka. These watercraft were constructed by local boat yards, including Moore Boat Works, in the early 1900s and called "Hudson River Canoes" that were "copied from the Indian model" (Moore Boat Works 1908, 23). Planked wooden canoes may be considered for NRHP nomination under Criterion C due to their distinctive characteristics as a type.

**W2. Wooden Rowboats.** Six wooden rowboat wrecks (21-HE-415, 21-HE-417, 21-HE-422, 21-HE-457, 21-HE-469, Fisherman's Friend Wreck) have been identified on the lake bottom, with a high probability of more to be identified because of the great numbers of this type used on Lake Minnetonka (Merriman and Olson 2013a, 16-20, 2013b, 17-18, 2014b, 44-45, 2015, 16-18). Due to the fragmentary condition of three of these specific sites (21-HE-417, 21-HE-422, 21-HE-469), they would not be considered for NRHP nomination. The Gideon Bay Wreck (21-HE-215) could be considered for NRHP nomination under Criteria C for its classic hourglass and clinker-built construction, and D because it is nearly complete, with surviving athwartships seats and hull sides. The Crystal Bay Rowboat Wreck (21-HE-457) could be considered for NRHP nomination under Criteria C for its detailed construction that includes thin futtocks and longitudinal stringers and carvel-built construction. One small rowboat wreck with a pointed bow, transom stern, and an athwartships planked bottom was removed from Wayzata Bay decades ago and it has been seen personally by the authors. While this boat cannot be considered for NRHP nomination due to its loss of context, the Fisherman's Friend Wreck (see above) is the same type and could be considered for NRHP nomination under Criteria C for its distinctive flat

bottom design and rare bottom athwartships plank construction and D because it is in nearly perfect condition on the lake bottom, probably guaranteed by its capsized position. All rowboats are rowed with the oars in rowlocks, and the rowers facing the stern.

### **W2. Identified Wreck Designs:**

1. Pointed decked bow, wineglass stern, clinker-built, longitudinally planked, frames, keel
2. Pointed bow, transom stern, carvel-built, longitudinally planked, frames, keel
3. Pointed bow, transom stern, carvel-built, athwartships planked bottom

Since the 1860s, hundreds of rowboats were used on Lake Minnetonka for fishing, local purposeful travel, and pleasure. Boarding houses and hotels owned fleets of these small watercraft for the enjoyment of their guests (Merriman and Olson 2013b, 9).

### **W2. Potential Wreck Designs:**

1. Pointed bow, transom stern, clinker-built, longitudinally planked, frames, keel
2. Pointed decked bow, transom stern, carvel-built, longitudinally planked, frames, keel
3. Pointed and decked bow and stern, carvel-built, frames, keel
4. Pointed and decked bow and stern, clinker-built, frames, keel

These vessels were often constructed from less expensive wood and if not stored properly, would rot quickly. Therefore, the best-preserved Lake Minnetonka wooden rowboats will be found on the lake bottom, probably in deeper water. The skill of the boatwright, the difficulty of design, the type of wood used, and the desired level of quality in the finished product are considerations in analyzing wooden rowboat wrecks. For NRHP consideration, wooden rowboat wrecks should be considered under Criterion C due to their distinctive typological attributes. Further, since these vessels were usually constructed without plans or their plans have not survived, examples on the lake bottom provide important information on the history of Minnesota small craft construction under Criterion D.

**W3. Wooden Sailboats.** One wooden sailboat has been located on the bottom of Lake Minnetonka to date, and the Wooden Mast or Boom represents a key component of a sailing vessel. The Wooden Sailboat Wreck is similar to the late 19th Century rowboats described above, with a wineglass stern and attached rudder post and it is clinker-built. The first recorded wreck on Lake Minnetonka was the capsized schooner *White Swan* in November 1857 whose cargo went to the lake bottom while the boat did not. The schooner was hired to move the Stone family from North Arm to Minnetonka Mills when the boat capsized in a violent gale; six people died, including two children. A 14 year-old boy survived by clinging to the bottom of the over-turned vessel that eventually floated to the shoreline (McGinnis 2010, 269; *Minnetonka Record* 1905). Other recorded sailboat wrecks include the wooden hulled sloop *Coquette/Eugene Mehl* scuttled in Crystal Bay in 1884 (McGinnis 2010, 46) and the wooden hulled 'Brackett Sloop' that sank during a squall in early May 1894 (*Northwestern Tourist* 1894). As mentioned above, in 1890 the newly-formed MYC had four classes of boats racing in their regattas. These sailboat classes were based on hull size, mast placement, and sail configuration (Kunz 1982). Defining sailboat wreck designs that may be found on the lake bottom could be problematic since the boat's "type" is usually determined by the vessel's sail shape - an attribute that often would not survive - and the number of masts such as schooner and ketch (2) or sloop and catboat (1); as well as the physical placement of the mast. Further, a boat's "class" as determined by the MYC was dependent on hull size. This MPDF is concerned with hull construction and form of propulsion to determine types and designs. The Wooden Sailboat Wreck could be considered for NRHP nomination under Criteria C for its classic hourglass and clinker-built construction. Other sailboat wrecks could be considered for nomination under Criterion B, C, or D depending on the specific archaeological and historical information associated with the structure.

### **W3. Identified Wreck Designs:**

1. Pointed bow, wineglass stern, frames, keel, single mast (sloop, catboat)

Since the 1860s, dozens of sailing boats were used on Lake Minnetonka for cargo transportation, local

purposeful travel, racing competitions, and pleasure.

### **W3. Potential Wreck Designs:**

1. Pointed bow, transom stern, frames, keel, two masts (schooner, ketch)
2. Pointed bow, transom stern, frames, keel, centerboard, two masts (schooner, ketch)
3. Pointed bow, transom stern, frames, keel, daggerboard, two masts (schooner, ketch)
4. Pointed bow, transom stern, frames, keel, single mast (sloop, catboat)
5. Pointed bow, transom stern, centerboard, frames, keel, single mast (catboat, sloop)
6. Pointed bow, transom stern, daggerboard, frames, keel, single mast (catboat, sloop)
7. Square bow, square stern, frames, keel, single mast (scow)
8. Square bow, square stern, centerboard, frames, keel, single mast (scow)
9. Square bow, square stern, daggerboard, frames, keel, single mast (scow)
10. Double hulled, frames, keels, one mast (catamaran)

Potential wooden sailboat wrecks on the bottom of Lake Minnetonka could be considered for NRHP nomination under Criteria B, C and D. Under Criterion B, in consideration of Lake Minnetonka history, a sailboat wreck determined to be the product of one of the noted boat wrights located on the lakeshore, particularly Arthur Dyer (creator of the locally-famed record-holding *Onawa*), Royal C. Moore, Thomas H. Wise, or Captain John R. Johnson. Under Criterion C, wooden sailboats linked to the yacht clubs on Lake Minnetonka are representative of distinctive classes of boats constructed to particular specifications such as A, C, and E scows, etc. Under Criterion D, few historic wooden sailing vessels have survived due to the material chosen for their construction, with the exception of the *Onawa* (on exhibit at the Excelsior Lake Minnetonka Historical Society) and a few other examples. Wrecks of this nature will expand our knowledge of these vessel types through their location and documentation; potential sailboat wrecks are physical representations of a historical Minnesota watercraft-building tradition.

**W4. Wooden Sailing Ice Boats.** Ice boating became popular on Lake Minnetonka beginning in the 1890s. No sailing ice boats have been located on the bottom of Lake Minnetonka to date but it is possible that wooden sailing ice boats went through thin ice at any point since then, or were left on the ice during a thaw.

### **W4. Potential Wreck Designs:**

1. T-Frame, three wooden runners, metal blades, singled mast, sloop-rigged (pictorial evidence)

If wooden sailing ice boat wrecks are identified on the bottom of Lake Minnetonka, they should be considered under Criteria C and D because of their unique design and their rarity.

**W5. Wooden Barges.** Currently there are four identified wooden barges on the bottom of Lake Minnetonka with construction dates spanning 1876-1926 and sinking dates spanning 1879-mid-1940s/early 1950s. All four of the wooden barges (21-HE-400, 21-HE-401, 21-HE-441) would be considered for NRHP nomination under Criteria C and D. While considered common watercraft, barges were not numerous in comparison with other types of vessels and these work vessels do not often survive in the archaeological record in spite of their sturdy construction (Merriman and Olson 2012a, 2013a, 2014b).

### **W5. Identified Wreck Designs:**

1. Pointed ends, bottom longitudinally planked, two layers of decking (one longitudinal, one athwartships), frames, keel (model barge)
2. Raked square ends, bottom athwartships planked, decked, frames (scow piledriver/dredge)
3. Raked square ends, bottom athwartships planked, partially decked, frames, side flaps (hopper barge)

Wooden barges, depending on their design, should be considered for NRHP nomination under Criteria B, C, and D. Under Criterion B, the Hopper Barge Wrecks were constructed and used by Captain John R. Johnson's Minnetonka Dredging Company (MDC); the St. Albans Bay Wreck likely was created and used by Johnson as well. Six wrecks (*Saucy Kate*, *Minneapolis*, *Priscilla*, St. Albans Bay Wreck, Hopper Barge Wrecks) have been



so far discovered that represent Captain Johnson's craftsmanship and/or his business interests, and survive on the bottom of the lake. In addition, Johnson was linked to numerous vessels on the lake as listed above, including the iconic *City of St. Louis*. Additionally, undiscovered wooden barge wrecks have the potential to be associated with the lives of significant people from our maritime past as well. Under Criterion C, the Wayzata Bay Wreck is a distinctive and rare model barge (only two partial model barge wrecks are known in the US archaeological record) with two pointed ends; the scow-ended Hopper Barge Wrecks have distinctive side flaps instead of bottom flaps, an innovation not seen in the historical or archaeological record; and the St Albans Bay Wreck typifies the wooden square-ended dredge/piledriver that shaped and changed Lake Minnetonka's shoreline and bottom. Under Criterion D, these four wooden barges and any yet to be identified on the lake bottom have the potential to provide naval architectural data for barge types that were constructed without plans or whose plans have not survived in the historical record, and that are rare in the archaeological record.

#### **W5. Potential Wreck Designs:**

1. Raked square ends, bottom athwartships planked, decked, frames, bottom flaps (scow hopper barge)
2. Raked square ends, bottom athwartships planked, decked, frames (example: scow ferry at the Narrows)
3. Pointed bow, square stern, frames, keel (examples: *Mermaid*, cut down from the *Governor Ramsey/Excelsior/Lady of the Lake/Minnetonka*; *Priscilla*, cut down from the *City of St. Louis*)
4. Pointed bow, square stern, bottom longitudinally planked, sponsons, frames, keel (example: mud barge cut down from the *City of St. Louis*)
5. Raked square ends, bottom longitudinally planked, decked, frames (example: *Nina*, cut down from steam propeller *Nina* (McGinnis 2010, 71, 95, 196, 214, 220))

The potential barge wreck sites that may be located on the bottom of Lake Minnetonka could be considered for NRHP nomination under Criteria B, C, and D, just like the four identified barge wrecks and using the same rationale.

**W6. Wooden Steamers.** Eight known wooden wrecks on the bottom of Lake Minnetonka were powered by steam (in *Priscilla's* case, she was powered by steam initially and then converted to internal combustion): *Saucy Kate* (21-HE-420), *Minneapolis* (21-HE-403), *George/Excelsior* (21-HE-399), *Como* (21-HE-397), *White Bear* (21-HE-281), *Hercules* (21-HE-398), *Hopkins/Minnetonka* (21-HE-396), and *Priscilla* (21-HE-404) (Merriman and Olson 2012a-b, 2013a-b, 2014b). Depending on the size of propeller steamers, they are classified as launches (50 feet and under) or passenger boats (51 feet and larger). Launches are privately owned/used boats and passenger boats are commercial vessels. The placement of the steam engines and boilers for propeller-driven launches and passenger boats is amidships.

#### **W6. Identified Wreck Designs:**

1. Pointed bow, round stern, bottom longitudinally planked, frames, keel, propeller (launch, passenger boat)
2. Pointed bow, transom stern, bottom longitudinally planked, frames, keel, sternwheel (passenger boat)
3. Rounded ends, bottom longitudinally planked, frames, keel, sidewheel (passenger boat)
4. Pointed bow, torpedo stern, bottom longitudinally planked, frames, keel, propeller (launch, passenger boat)
5. Rounded ends, bottom longitudinally planked, frames, keel, sidewheel (passenger boat)

All known steamer wrecks in Lake Minnetonka have the potential to represent events that have made a significant contribution to the broad patterns of history - Criterion A. All the steamer wrecks - with the exception of *George/Excelsior* - are associated with persons that were significant to Lake Minnetonka's and Minnesota's maritime past, specifically Captain John R. Johnson and Royal C. Moore - Criterion B. Of the eight known steamers, the Streetcar Boats (*Como*, *Hopkins/Minnetonka*, *White Bear*) with their torpedo stern design and resemblance to the TCRT streetcars embody distinctive characteristics of their type and the period within which they operated - Criterion C. While the construction attributes of the Streetcar Boats are known, the other five steamer wrecks were built by local boatwrights and with the exception of *Hercules*, no plans of their construction have survived. The physical remains on the lake bottom of these Lake Minnetonka propeller, sternwheel, and sidewheel steamers could be considered for NRHP nomination under Criterion D.

#### **W6. Potential Wreck Designs:**

1. Rounded bow and stern, bottom longitudinally planked, frames, keel, propeller (launch, passenger boat)
2. Pointed ends, bottom longitudinally planked, frames, keel, sidewheel (passenger boat)
3. Pointed bow, round stern, bottom longitudinally planked, frames, keel, sidewheel (passenger boat)
4. Pointed bow, transom stern, bottom longitudinally planked, frames, keel, sidewheel (passenger boat)

In the historical record, over the decades, dozens of steamers have sank in Lake Minnetonka through boiler explosions and burning, storms, collisions, or simply grounded, and some were raised, re-built, and re-launched. Others have been cut down, re-designed, and re-used (McGinnis 2010). Of the small steam launches, mid-sized steamers, and large steamer excursion vessels on the lake, however, few have survived in the archaeological record. Some have been reported to have sank or were abandoned in specific locations, often at a shoreline. The problem inherent with shoreline-abandoned steamers is the changing nature of the lake's banks from natural processes and human intervention: rip rap operations, dredging, and dock and pier installations. Depending on which steamers are located in the future, the potential for their consideration under Criteria A, B, C, and D is possible using the same rationale as those associated with the known steamer wrecks.

**W7. Wooden Gasoline Powered Inboards.** Gasoline powered inboard boats have operated on Lake Minnetonka since the late 1890s when medium and large-sized launches were constructed for those who could afford this type of personal watercraft. Seven identified wooden wrecks on the lake bottom were powered by gasoline inboard engines: two cruisers (21-HE-446, one no site number), a motorized ice boat (21-HE-416), and 4 utilities (21-HE-423, 21-HE-424, 21-HE-447, 21-HE-467). The Capsized Wood Boat Wreck (21-HE-418) was likely gasoline powered or was possibly a naphtha launch (Merriman and Olson 2013a-b, 2014b).

#### **W7. Identified Wreck Designs:**

1. Pointed bow, transom stern, foredeck, cabin, bottom longitudinally planked, carvel-built, frames, keel, inboard engine amidships, propeller (cruiser)
2. Pointed bow, transom stern, foredeck, bottom longitudinally planked, carvel-built, frames, keel, inboard engine doghouse behind seat, propeller (utility)
3. Pointed bow, transom stern, foredeck, plywood-planked, frames, keel, inboard engine doghouse behind seat, propeller (utility)
4. Narrow bow with runner, wide stern with two aft runners port and starboard (ice boat)

Lake Minnetonka's wooden gasoline powered wrecks span many decades of history and those currently identified on the lake bottom are similar in design, regardless of differences in size and age. Manufacturers currently represented by wooden gasoline powered wrecks on the lake bottom include Century, Correct Craft, and Owens, with the brand of two wrecks unknown. Naphtha launches were popular with some boaters because they did not fall under the same safety regulations that vessels with steam boilers had to meet – meaning a trained and licensed boiler operator did not have to be on board or employed by the boat's owner. The first naphtha launch on Lake Minnetonka, *Tatu*, was constructed in New York for Charles Gibson and launched on the lake in 1889 (McGinnis 2010, 242-243). Naphtha engines visually resembled small steam engines and were placed near the launch's stern; launches and passenger boats driven by propellers carried their inboard engines just aft of amidships. The identified wooden gasoline powered inboard wrecks in the lake could be considered for NRHP nomination under Criterion C for possibly-locally built cruiser wreck and in the future, Criterion D for the nationally-manufactured utilities and cruisers. One issue in determining the viability for NRHP consideration of wooden gasoline powered inboard wrecks are the incredible number of them that have been restored and are still afloat; in other words, many of them are common now, but in the future they may be rare and they would be indicative of their type.

#### **W7. Potential Wreck Designs:**

1. Pointed bow, round stern, bottom longitudinally planked, frames, keel, inboard engine amidships, propeller

- (launch, passenger boat)
2. Pointed bow, torpedo stern, bottom longitudinally planked, frames, keel, propeller (launch, passenger boat)
  3. Pointed bow, transom stern, foredeck, cabin, bottom longitudinally planked, clinker-built, frames, keel, inboard engine amidships, propeller (cruiser)
  4. Pointed bow, transom stern, foredeck, bottom longitudinally planked, clinker-built, frames, keel, inboard engine doghouse behind the front seat, propeller (utility)
  5. Pointed bow, transom stern, foredeck, single/double/triple cockpit, bottom longitudinally planked, carvel-built, frames, keel, inboard engine, propeller (runabout, racing boat)
  6. Pointed bow, transom stern, foredeck, single/double/triple cockpit, bottom longitudinally planked, clinker-built, frames, keel, inboard engine, propeller (runabout)
  7. Pointed bow, transom stern, foredeck, cabin, plywood planked, frames, keel, inboard engine amidships, propeller (cruiser)
  8. Pointed bow, transom stern, foredeck, single/double/triple cockpit, plywood planked, frames, keel, inboard engine, propeller (runabout, racing boat)

The potential to locate numerous gasoline-powered inboard wooden wrecks, including those known as runabouts and racing boats, on the bottom of Lake Minnetonka is high. The most likely manufacturer-constructed wrecks to be found on the lake bottom are Chris-Craft, Hacker-Craft, Lyman, Barbour, and Gar Wood, along with the locally-built Moore, Ramaley, Dingle and Wise. There are dozens of other gasoline powered inboard wooden boat makers in the US and abroad, so any number of different manufacturer's vessels could be located on the lake bottom. These wrecks could be considered for NRHP nomination under Criteria C and D under the same rationale as the known cruisers and utilities above.

**W8. Wooden Gasoline Powered Outboards.** One wooden wreck powered by a gasoline outboard motor has been identified on the bottom of Lake Minnetonka, the Wooden Motor Boat Wreck. Although the wreck no longer carries its motor, attributes such as a its reinforced stern and its registration number (initially only required on power boats) are indicators that it once carried an outboard.

#### **W8. Identified Wreck Design**

1. Pointed bow, transom stern, thwarts, longitudinally planked, carvel-built, frames, keel, outboard motor

#### **W8. Potential Wreck Designs:**

1. Pointed bow, transom stern, thwarts, longitudinally planked, clinker-built, frames, keel, outboard motor
2. Pointed bow, transom stern, thwarts, athwartships planked, carvel-built, outboard motor
3. Blunt bow, transom stern, thwarts, plywood planked, frames, keel, outboard motor (skipper pram)
4. Pointed bow, transom stern, foredeck, single/double/triple cockpit, bottom longitudinally planked, carvel-built, frames, keel, outboard motor (runabout, racing boat)
5. Pointed bow, transom stern, foredeck, single/double/triple cockpit, bottom longitudinally planked, clinker-built, frames, keel, outboard motor (runabout)
6. Pointed bow, transom stern, foredeck, single/double/triple cockpit, plywood planked, frames, keel, outboard motor (runabout, racing boat)
7. Pointed bow, transom stern, foredeck, bottom longitudinally planked, clinker-built, frames, keel, outboard motor (utility)
8. Pointed bow, transom stern, foredeck, bottom longitudinally planked, carvel-built, frames, keel, outboard motor (utility)
9. Pointed bow, transom stern, foredeck, plywood planked, frames, keel, outboard motor (utility)
10. Square bow, square stern, plywood planked, thwarts, frames, keel, outboard motor (jon boat, duck boat, scow)

The reported sinking of a skipper pram in May 1931 is one confirmed wrecking of a wooden plywood-planked boat with an outboard motor, resulting in two fatalities. The wreck remained on the bottom of Lake Minnetonka even after one of the bodies was released from the wreck through dragging (*Minnetonka Herald* 1931a-d). The above potential wreck sites could be considered for NRHP nomination under Criteria C and D depending on

their specific contexts, histories, and construction details.

**W9. *Wooden Gasoline/Diesel Powered Inboard/Outboards.*** No wooden wrecks powered by gasoline inboard/outboard engines have been identified on the bottom of Lake Minnetonka as of yet.

**W9. Potential Wreck Designs:**

1. Pointed bow, transom stern, foredeck, single/double/triple cockpit, bottom longitudinally planked, carvel-built, frames, keel, inboard/outboard engine (runabout, racing boat)
2. Pointed bow, transom stern, foredeck, single/double/triple cockpit, bottom longitudinally planked, clinker-built, frames, keel, inboard/outboard engine (runabout)
3. Pointed bow, transom stern, foredeck, single/double/triple cockpit, plywood planked, frames, keel, inboard/outboard engine (runabout, racing boat)
4. Pointed bow, transom stern, foredeck, bottom longitudinally planked, clinker-built, frames, keel, inboard/outboard engine (utility)
5. Pointed bow, transom stern, foredeck, bottom longitudinally planked, carvel-built, frames, keel, inboard/outboard engine (utility)
6. Pointed bow, transom stern, foredeck, plywood planked, frames, keel, inboard/outboard engine (utility)

Any of the potential wooden gasoline powered inboard/outboard wrecks of the designs listed above would date to 1959 or later since this engine type was introduced into the US that year. American marine designer Jim Wynne developed the inboard/outboard engine in his garage, but no US company would back his work financially. Wynne went to Europe and with the support of the Swedish manufacturer Volvo, the Volvo Penta Aquamatic inboard/outboard engine was constructed. Few wooden inboard/outboard gasoline powered boats have been constructed since this engine type has been primarily installed in fiberglass watercraft (Volvo Penta 2009). Wooden gasoline powered inboard/outboard wrecks in Lake Minnetonka could be considered for NRHP nomination under Criteria C and D, particularly if a Volvo Penta Aquamatic is found to be the vessel's engine. An argument under Criteria Consideration G would be required for any that are more recent than the mid-1960s.

**Metal Properties: Wrecks**

**M1. *Metal Canoes.*** To date, three aluminum canoes have been located on the bottom of Lake Minnetonka. They date from the 1960s to possibly the 1980s, and they sank in the late 1970s, early 1980s, and possibly the 1990s (Merriman and Olson 2013b, 45-48, 2014b, 31-32). Therefore, most will be outside of the period covered by this MPDF.

**M1. Identified Wreck Designs:**

1. Pointed ends, thwarts, keel, aluminum

The potential to locate other metal canoes on the lake bottom is good, considering the great number of these small watercraft that have been used by lake residents and visitors over the decades.

**M1. Potential Wreck Designs:**

1. Pointed ends, thwarts, keel, steel
2. Pointed bow, square stern, thwarts, keel, aluminum
3. Pointed bow, square stern, thwarts, keel, steel
4. Pointed ends, thwarts, bilge keel, keel, aluminum
5. Pointed ends, thwarts, bilge keel, keel, steel
6. Pointed bow, square stern, thwarts, bilge keel, keel, aluminum
7. Pointed bow, square stern, thwarts, bilge keel, keel, steel
8. Pointed ends, thwarts, splash rail, keel, aluminum
9. Pointed ends, thwarts, splash rail, keel, steel
10. Pointed bow, square stern, thwarts, splash rail, keel, aluminum

## 11. Pointed bow, square stern, thwarts, splash rail, keel, steel

Metal canoes can also be fitted with small outboard motors, either trolling motors or 3 HP types. In the future, it is possible that metal canoes may be considered for NRHP nomination. It is not considered likely that any would currently meet the exceptional significance threshold of Criteria Consideration G.

**M2. Metal Barges.** One metal-hulled barge wreck has been identified on the bottom of Lake Minnetonka, the Echo Bay Metal Barge Wreck that was constructed in the 1970s and sank between 1981-1985 (Merriman and Olson 2013a, 43-45). If the Echo Bay Metal Barge Wreck is more recent in age than the period of this MPDF. The wreck may be considered for NRHP nomination in the future, but it does not currently meet the exceptional significance threshold of Criteria Consideration G.

### **M2. Identified Wreck Designs:**

1. Raked square bow, transom stern, partially decked, frames, steel (bulk cargo barge)

There may be more of this wreck type in the lake, given that in the latter half of the 20<sup>th</sup> century, metal barges were extensively used around the lake for shoreline improvements, rip rap, pier and dock construction, and to transport dredge spoil, just like their wooden predecessors.

### **M2. Potential Wreck Designs:**

1. Raked square ends, partially decked, frames, bottom flaps, steel (scow hopper barge)
2. Raked square ends, partially decked, frames, steel (scow bulk cargo barge)
3. Raked square ends, frames, bottom flaps, steel (scow hopper barge)
4. Raked square ends, frames, steel (scow bulk cargo barge)
5. Raked square ends, decked, frames, steel (working platform scow barge)
6. Raked square bow, transom stern, decked, frames, steel (working platform barge)
7. Raked square bow, transom stern, partially decked, frames, bottom flaps, steel (bulk cargo barge)
8. Raked square bow, transom stern, frames, bottom flaps, steel (bulk cargo barge)
9. Raked square bow, transom stern, frames, steel (bulk cargo barge)

The Echo Bay Metal Barge Wreck sank due to high waves and wind, a common occurrence on the lake. In consideration of the lake's large size and the amount of shoreline work that has occurred, the potential to find more metal-hulled barges on the bottom of Lake Minnetonka is good. In the future, metal barges could be considered for NRHP nomination, but they are outside the current period of significance for this MPDF.

**M3. Metal Gasoline Powered Outboards.** To date, seven metal-hulled wrecks powered by gasoline outboard motors have been identified on the bottom of Lake Minnetonka.

### **M3. Identified Wreck Designs:**

1. Pointed bow, transom stern, thwarts, center steering console, single cockpit, keel, outboard motor, aluminum (runabout)
2. Pointed bow, transom stern, foredeck, thwarts, keel, outboard motor, aluminum (utility)
3. Pointed bow, transom stern, thwarts, keel, outboard motor, aluminum (utility)
4. Square raked bow, transom stern, amphibious, outboard motor, steel (houseboat)
5. Double hull pontoons, wooden platform deck, outboard motor, aluminum (pontoon boat)

Three of the identified wrecks were constructed in 1949, one in 1959, and one in 1977, with two having unknown construction dates. One of them sank in a collision, two by accident, one was stolen and intentionally scuttled, and three of them sank for unknown reasons. The outboard motors for four of these wrecks (including the scuttled watercraft) are missing, suggesting they were removed prior to being intentionally sunk. Four of the seven identified metal hulled-wrecks with gasoline outboard motor propulsion were locally-built, while another was constructed in Texas. These wrecks that date to within the period of this MPDF could be considered for NRHP nomination under Criteria A, C, and D. Two of the Minnesota-built wrecks are of the

same model with slightly different designs, and the history behind one of them is known (21-HE-448). The wreck from Texas is a rare and innovative watercraft constructed from World War II surplus equipment (Merriman and Olson 2013a-b, 2014b). Those that are more recent in age would need to be considered under Criteria Consideration G.

The potential designs of metal gasoline outboard wrecks yet to be identified on the bottom of Lake Minnetonka primarily center around personal watercraft used for fishing, waterskiing, and pleasure boating.

### **M3. Potential Wreck Designs:**

1. Square raked bow, square stern, thwarts, keel, outboard motor, aluminum (jon boat, duck boat)
2. Pointed bow, transom stern, foredeck, keel, outboard motor, aluminum (utility)
3. Pointed bow, transom stern, keel, outboard motor, aluminum (houseboat)
4. Pointed raked bow, transom stern, tall center console, keel, outboard motor, aluminum (whaler)
5. Square raked bow, transom stern, tall center console, keel, outboard motor, aluminum (whaler)
6. Square raked bow, transom stern, outboard motor, aluminum (houseboat)
7. Double hull pontoons, platform deck, outboard motor, steel (pontoon boat)

In the future these wrecks could be considered for NRHP nomination, depending on their design, specific attributes, and manufacturer.

**M4. *Metal Gasoline/Diesel Powered Inboard/Outboards.*** No gasoline or diesel powered inboard/outboard wrecks have been identified on the bottom of Lake Minnetonka yet.

### **M4. Potential Wreck Designs:**

1. Pointed bow, transom stern, foredeck, single/double/triple cockpit, keel, inboard/outboard engine, aluminum (runabout, racing boat)
2. Pointed bow, transom stern, foredeck, keel, inboard/outboard engine, aluminum (utility)
3. Square raked bow, transom stern, inboard/outboard engine, steel (houseboat)
4. Double hull pontoons, transom platform deck, inboard/outboard engine, aluminum (pontoon boat)

Just like their wooden-hulled counterparts, any of the potential metal-hulled gasoline or diesel powered inboard/outboard wrecks of the designs listed above would date to 1959 or later since this engine type was introduced into the US that year. Few wooden inboard/outboard gasoline or diesel powered boats have been constructed since this engine type has been primarily installed in fiberglass watercraft, as mentioned above (Volvo Penta 2009). Metal gasoline or diesel powered inboard/outboard wrecks in Lake Minnetonka dating to within the period of this MPDF could be considered for NRHP nomination under Criteria C and D, particularly if a Volvo Penta Aquamatic is found to be the vessel's engine.

**M5. *Metal Gasoline/Diesel Powered Inboards.*** Currently there are no metal inboard wrecks known on the bottom of Lake Minnetonka, but there is potential to identify this wreck type.

### **M5. Potential Wreck Designs:**

1. Pointed bow, transom stern, foredeck, keel, inboard engine in doghouse, aluminum (utility)
2. Pointed bow, transom stern, foredeck, single/double/triple cockpit, keel, inboard/outboard engine, aluminum (runabout, racing boat)
3. Pointed bow, transom stern, inboard engine (houseboat).

Metal wrecks with inboard engines may be considered for NRHP nomination in the future, depending on date of manufacture, the manufacturer, and the history of the wreck.

## Fiberglass Properties: Wrecks

**F1. Fiberglass Canoes.** No fiberglass canoes have been located on the bottom of Lake Minnetonka. The buoyant nature of fiberglass, particularly when used in a kayak with its mostly enclosed deck, makes the likelihood of identifying an example of this watercraft type low. It is unlikely that a fiberglass canoe would fall within the period of this MPDF.

**F2. Fiberglass Rowboats.** No fiberglass rowboats have been located on the bottom of Lake Minnetonka yet. It is possible, due to the low freeboard and open nature of these small craft, that examples could be swamped in high wind and waves, and sink to the bottom.

### F2. Potential Wreck Designs:

1. Pointed bow, transom stern, thwarts
2. Pointed bow, wineglass stern, thwarts
3. Raked square bow, transom stern, thwarts
4. Pointed bow, transom stern, thwarts, keel
5. Pointed bow, wineglass stern, thwarts, keel

Since fiberglass is a formed material, there is no structural difference between smooth hull and imitation clinker-built watercraft; the difference is purely cosmetic and not an attributed used to determine design. It is unlikely that a fiberglass rowboat would fall within the period of this MPDF. In the future, however, fiberglass rowboats could be considered for NRHP nomination depending on their design, manufacturer, and rarity.

**F3. Fiberglass Sailboats.** No fiberglass sailboat wrecks have been identified on the bottom of Lake Minnetonka. However, the potential to discover this type of vessel is good considering the great number of racing sailboats affiliated with the yacht clubs on the lake. The use of fiberglass sailboats was allowed in inland yachting competitions beginning in the 1950s, and fiberglass pleasure sailing boats were available at the same time.

### F3. Potential Wreck Designs:

1. Pointed bow, wineglass stern, keel, single mast (sloop, catboat)
2. Pointed bow, transom stern, keel, single mast (sloop, catboat)
3. Pointed bow, transom stern, centerboard, single mast (catboat, sloop)
4. Pointed bow, transom stern, daggerboard, single mast (catboat, sloop)
5. Square bow, square stern, single mast (scow)
6. Square bow, square stern, centerboard, single mast (scow)
7. Square bow, square stern, daggerboard, single mast (scow)
8. Double hulled, one mast (catamaran)

If any design of fiberglass sailboat is located on the bottom of Lake Minnetonka, depending on their manufacturer, design, and rarity, they could be considered for NRHP nomination under Criteria C and D.

**F4. Fiberglass Gasoline Powered Outboards.** So far there are three identified fiberglass gasoline outboard motor wrecks on the bottom of Lake Minnetonka, the Span America Nomad Runabout Wreck, Blue Star Miamian Custom Wreck (21-HE-bn), and the Owens Twin Sport Wreck.

### F4. Identified Wreck Designs:

1. Pointed bow, transom stern, foredeck, keel, outboard motor (utility)
2. Pointed bow, transom stern, aft seats, foredeck, keel, outboard motor (runabout)

The three known fiberglass wrecks powered by gasoline outboard motors were constructed between 1959 and 1962. It has been determined that Blue Star Miamian Custom Wreck was a casualty of the May 6, 1965 Deephaven tornado, and the Owens Twin Sport Wreck might have been as well. All three wrecks are rare

forms of fiberglass construction, manufactured by companies that formed these designs for a limited number of years - two years for two of them and 2-4 years for the other (Merriman and Olson 2013a, 34-39, 2013b, 29-32, 2014b, 34-37). Therefore, the Blue Star Miamian Custom Wreck could be considered for NRHP nomination under Criteria A, C, and D, while the Owens Twin Sport Wreck and Span America Nomad Runabout Wreck could be considered under Criteria C and D.

The potential designs of fiberglass gasoline outboard wrecks yet to be identified on the bottom of Lake Minnetonka primarily center around smaller personal watercraft used for fishing and pleasure boating, but larger cruiser wrecks with outboards may be located as well.

#### **F4. Potential Wreck Designs:**

1. Pointed bow, transom stern, foredeck, single/double/triple cockpit, keel, outboard motor (runabout, racing boat)
2. Pointed bow, transom stern, keel, outboard motor (houseboat)
3. Pointed raked bow, transom stern, tall center console, keel, outboard motor (whaler)
4. Square raked bow, transom stern, tall center console, keel, outboard motor (whaler)
5. Square raked bow, transom stern, outboard motor (houseboat)

In the future fiberglass gasoline powered outboard wrecks could be considered for NRHP nomination under Criteria C and D, depending on their design, specific attributes, and manufacturer.

**F5. Fiberglass Gasoline/Diesel Powered Inboard/Outboards.** Currently there are two identified fiberglass inboard/outboard wrecks, the Red Fiberglass Wreck and Larson Delta Sport Cruiser 7000 Wreck, on the bottom of Lake Minnetonka.

#### **F5. Identified Wreck Designs:**

1. Pointed bow, transom stern, foredeck, keel, inboard/outboard engine in stern dog house (utility)
2. Pointed bow, transom stern, cuddy/cabin, foredeck, keel, inboard/outboard engine (cruiser)

The Red Fiberglass Wreck has a Chrysler Marine Volvo Penta engine and her manufacturer is currently unknown. The Larson Delta Sport Cruiser 7000 had a choice of three engines; it is unknown which one is on the wreck (Merriman and Olson 2013b, 48-51, 2014b, 42-44, 2015, 24-25). Utility and cruiser fiberglass wrecks with inboard/outboard engines may be considered for NRHP nomination under Criteria C and D, depending on date of manufacture, the manufacturer, and the history of the wreck.

At least two forms of fiberglass-hulled wrecks with inboard/outboard engines may be located on the bottom of Lake Minnetonka in the future.

#### **F5. Potential Wreck Designs:**

1. Pointed bow, transom stern, foredeck, single/double/triple cockpit, keel, inboard/outboard engine (runabout, racing boat)
2. Square raked bow, transom stern, inboard/outboard engine (houseboat).

Fiberglass wrecks with inboard/outboard engines may be considered for NRHP nomination under Criteria C and D, depending on date of manufacture, the manufacturer, and the history of the wreck.

**F6. Fiberglass Gasoline/Diesel Powered Inboards.** Currently there is one identified fiberglass inboard wreck on the bottom of Lake Minnetonka, the Fiberglass Racing Boat Wreck. The history and specific construction details of this wreck remain unknown at this time due to its nearly buried nature. However, its raked sharply pointed bow, low freeboard, severe hard chine, and large, powerful inboard engine strongly suggest its function was a competitive racing boat.



### **F6. Identified Wreck Design:**

1. Pointed bow, transom stern, foredeck, single/double/triple cockpit, keel, inboard engine (runabout, racing boat)

The Fiberglass Racing Boat may be considered for NRHP nomination in the future under Criteria C and D depending on the distinctiveness of the hull design, rarity, condition, and its specific history.

### **F6. Potential Wreck Designs:**

1. Pointed bow, transom stern, foredeck, keel, inboard engine in doghouse (utility)
2. Pointed bow, transom stern, inboard engine (houseboat).

Fiberglass wrecks with inboard engines may be considered for NRHP nomination under Criteria C and D, depending on date of manufacture, the manufacturer, and the history of the wreck.

### **Property Types: Other**

The SMILR MPDF did not take into consideration other types of underwater archaeological sites that may be identified on the bottom of Lake Minnetonka. This MPDF will consider the known properties and others that may be found in the future. At the time of writing, there are 13 types of maritime/other objects recognized on an island and on the bottom of Lake Minnetonka.

### **Wooden Properties: Maritime Objects**

#### **Identified Wooden Maritime Objects:**

**W10. Wooden Pier.** The remains of the steamboat pier constructed in 1906 for the TCRT ferries *Minneapolis*, *St. Paul*, and *Minnetonka* at Big Island are extant in Big Island Bay. The remains are comprised of pier pilings and horizontal slats between the pilings. The pier is a section of the Big Island Pier, Park, and Veterans Camp Site (21-HE-402), a combined underwater and terrestrial maritime archaeological site (Merriman and Olson 2007, 2013a, 43-47). The submerged pier remains and entire island site could be considered for NRHP nomination under Criteria C and D.

**W11. Wooden Dock.** The carpeted wooden dock section located on the bottom of Lafayette Bay that probably sank in the 1990s or early 2000s (Merriman and Olson 2014b, 47) does not qualify for NRHP nomination. Other, older properties of this type may be considered for nomination under Criteria C and D.

**W12. Wooden Mast or Boom.** The wooden mast or boom from an old sailboat does not qualify for NRHP nomination because it is only part of a boat and does not exhibit enough detail to rise to the required level of significance (Merriman and Olson 2015, 26-27).

#### **Potential Wooden Maritime Objects:**

**W13. Wooden Dive Platforms.** A wooden dive platform, the type that would be anchored in a bay near a shoreline for recreation, may be a potential wooden maritime site located on the bottom of Lake Minnetonka. Sonar evidence of points to the existence of this site type on the bottom of the Upper Lake's Crystal Bay (Merriman and Olson 2012a, 50).

**W14. Wooden Fish Houses.** Although no fish houses have been identified on the bottom of Lake Minnetonka yet, the chances of locating this type of site is high. Sites of this type are unlikely to qualify for NRHP nomination.

## Metal Properties: Maritime Objects

### Identified Wooden Maritime Objects:

**M6. Metal Marine Launch Boilers.** The Marine Launch Boilers Site (21-HE-421) represents the only known steam power plants from Lake Minnetonka's steamboat heyday (Merriman and Olson 2013b, 19-22). They could be considered for NRHP nomination under Criteria C and D. Similar sites located in the future could also be considered under the same criteria, with the addition of Criterion A and/or B depending on the boiler's origin, history, and context.

**M7. Metal pontoons.** Two pontoons constructed of steel drums welded together and held by straps, of different sizes and in different locations, exhibit distinct attributes specific to watercraft constructed by the Weeres Company of Richmond, MN. Two other metal pontoons of two different designs have also been identified on the bottom of Lake Minnetonka (Merriman and Olson 2014b, 45-47, 2015, 27-28). Due to the distinct characteristics of the Weeres site, their rarity, and their probable construction by Minnesota's Weeres Company, those two pontoons could be considered for NRHP nomination under Criteria C and D.

**M8. Metal Model T Ford Doodlebug.** The Model T Ford Doodlebug Site (21-HE-bm) represents the wood cutting industry and the commerce it supported in the first half of the 20<sup>th</sup> Century (Merriman and Olson 2014b, 24-26). This site, and others like it, could be considered for NRHP nomination under Criteria C and D.

**M9. Metal Boat Canopy Frames.** The two known metal boat canopy frames represent maritime infrastructure and it is likely that more canopies will be identified on the lake bottom, probably deposited there by high winds. These objects do not qualify for NRHP nomination.

**M10. Metal Boat Lift.** Like metal canopy frames, boat lifts are pieces of dock infrastructure that may be deposited on the lake bottom because of storms or high winds. These objects do not qualify for NRHP nomination.

**M11. Metal Boat Ladder.** As part of the gear on a pleasure craft, metal boat ladders do not qualify for NRHP nomination (Merriman and Olson 2015, 29).

**M12. Metal Pontoon Raft.** A pontoon raft comprised of steel pontoons with a wooden platform represents recreation on Lake Minnetonka (Merriman and Olson 2013a, 51); it doesn't qualify for NRHP nomination.

### Potential Metal Maritime Objects:

**M13. Metal Anchors.** Many anchors lie on the bottom of Lake Minnetonka - the wreck of the tug *Priscilla* and one of the Weeres pontoons have each snagged Danforth anchors - and as maritime artifacts, have historical value (Merriman and Olson 2013a, 11-13, 2014b, 45-47). However, unless an anchor can be linked to a particular historically important boat or wreck, or they are a rare design, they do not qualify for NRHP nomination.

**M14. Metal Outboard Motors.** Confirmed sightings of individual outboard motors have been made on the bottom of Lake Minnetonka. These motors could have fallen off moving boats, were thrown into the lake to dispose of them, or were propelled into the lake by tornadoes. They do not qualify for NRHP nomination.

## Other Properties: Objects

### Identified Other Objects:

**OP1. Vehicles.** To date three cars, one truck, and one snowmobile have been located on the bottom of Lake Minnetonka. While these vehicles were engaged in maritime cultural activities such as transporting people to fish houses or as the focus of a "Dunk the Clunk" fundraiser, these sites do not qualify for NRHP nomination (Merriman and Olson 2013a, 47-51, 2013b, 50-52, 2014b, 32-34, 2015, 31-33).

**OP2. *Miscellaneous Maritime Objects.*** Several objects that either fell off of boats, were discarded intentionally off boats, were dislodged from dock structures, or are part of maritime infrastructure have been located on the bottom of the lake: a metal water intake pipe with a wooden crib and stone base, the concrete and metal buoy anchors, "The Old Man of St. Albans Bay", the metal pole and electrical box, a metal pipe, and a metal box (Merriman and Olson 2015, 35). These objects do not qualify for NRHP nomination.

**OP3. *Miscellaneous Objects.*** Other non-maritime themed items have been identified in Lake Minnetonka and represent human made objects that have been disposed of intentionally, simply for the ease of dumping them in a large body of water. Among the recognized items are a water heater, two pieces of concrete, a small metal drum, and a marine toilet. Items associated with railroads such as ties, rail, or railroad cars could be located in those areas of Lake Minnetonka where the shoreline is in close association with the railroad lines. Additionally, thousands of miscellaneous human-made objects have been blown into the lake during storms, dropped into the lake by boats, and dropped through fishing holes: coolers, lawn chairs, plastic chairs, bottles, cans, fishing gear, and many other object not yet seen. None of these objects would be considered for NRHP nomination unless a particular artifact could be linked to an important event, person, or was a rare example of its type.

## G. GEOGRAPHICAL DATA

Lake Minnetonka is over 14,000 acres in size. The lake is located west of Minneapolis in Hennepin County, with the exception of a portion of Smithtown Bay that is located in Carver County, Minnesota. The 14 communities and towns located on the lake are: Victoria, Minnetrista, Mound, Spring Park, Shorewood, Orono, Minnetonka Beach, Tonka Bay, Excelsior, Greenwood, Deephaven, Woodland, Wayzata, and Minnetonka. The Upper Lake is located to the west of the Lower Lake. Lake Minnetonka is comprised of 26 bays (Halsted, Priests, Cooks, Smithtown, Phelps, Harrisons, Jennings, Stubbs, Maxwell, Crystal, Spring Park, Carman, Old Channel, Lafayette, Echo, Tonka, Gideon, Excelsior, St. Albans, Smiths, Browns, Carsons, St. Louis, Robinsons, Wayzata, Grays) and 7 large sections of water (West Upper Lake, South Upper Lake, West Arm, North Arm, East Upper Lake, Lower Lake South, Lower Lake North) that connect the bays. Six Mile Creek flows into Halsted Bay at the western-most section of the Upper Lake and Painters Creek flows into Jennings Bay at the Upper Lake's northwest corner. Further, Virginia, Dutch, Langdon, Emerald, Seton, Black, Forest, French, Tanager, Peavy, and Libbs Lakes also drain into Lake Minnetonka, along with Woolsey Pond. In the case of Emerald, Seton, and Black, these small lakes serve as connections between the Upper Lake bays of Spring Park, Cooks, and Harrisons. The lake has sixteen islands: Shady, Crane, Eagle, Wawatasso, Enchanted, Spray, Goose, Phelps, Deering, Pelican, Duck, Frog, Big, Mahpiyata, Lighthouse, and Spirit. Other water drains into the lake as run-off. Minnehaha Creek flows out of Grays Bay through the Grays Bay Dam at the northeastern corner of the lake in Minnetonka. Minnehaha Creek flows into the Mississippi River at Minnehaha Park in Minneapolis, 22 miles away.

## H. SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The SMILR MPDF, created to consider what types of watercraft could be identified and considered for NRHP nomination in every lake and river in the state, is limited in its scope in relation to Lake Minnetonka and the diversity of sites located there do date. The SMILR MPDF states that "because so little is known about individual types and so few examples of vessel types (i.e. property types) are expected to be identified in Minnesota's inland waters, the vessel types were not grouped into categories but only into two broad classes based on the vessels [sic] mode of power" (Hall, Newell, and Birk 1998, H-2). Firstly, no systematic remote sensing archaeological surveys had been attempted in Minnesota before 2010, when Maritime Heritage

Minnesota (MHM) conducted the Mississippi River Aitkin County Survey. This first survey has led to others, including the Minnesota River Survey 1 (2011), the Lake Minnetonka Surveys 1 and 2 (LMS-1, LMS-2, 2011-2012), White Bear Lake Survey (2012), and Lake Waconia Survey (2012). Therefore, so little was known about individual types at the time the SMILR MPDF was written because no comprehensive underwater archaeological surveys or projects had been conducted in Minnesota. In reference to the assertion that so few sites were *expected* to be located in Minnesota, that conclusion was made before any projects had yet been conducted to support such a claim. When systematic remote sensing surveys in Minnesota are conducted and followed-up by Phase 1 underwater archaeological investigations, both wrecks and other submerged cultural resources are located and identified.

In the case of Lake Minnetonka, as of mid-September 2015, there are 47 identified wrecks on the bottom of Lake Minnetonka or that were once on the bottom, including a Woodland Culture dugout canoe removed from the lake in 1934. Of these wrecks, 27 of them have 26 Minnesota archaeological site numbers; 2 wrecks are features of one site. The precise sinking dates or the year of disposition of 12 of the 16 remaining wrecks are known. Further, 3 other types of maritime sites now have archaeological site numbers and there are 10 maritime sites without numbers. Additionally, other objects have been identified that do not have site numbers: 3 cars, 1 truck, 1 snowmobile, and 6 'other' human-made objects. Therefore, underwater archaeological fieldwork completed at Lake Minnetonka prompted the suggestion by Minnesota National Register Archaeologist David Mather that the development of an MPDF specifically for Lake Minnetonka would be appropriate. The resulting Wrecks and Submerged Cultural Resources of Lake Minnetonka, Minnesota (BC 9500 - AD 1965) MPDF was prepared by Maritime Heritage Minnesota under a grant funded by the Minnesota Historical and Cultural Heritage Grant program, part of the Arts and Cultural Heritage Fund of the Clean Water, Land and Legacy Amendment.

## IDENTIFICATION METHODS

This MPDF was developed using the data gathered during these eight projects: the Dig on This Archaeology Program (2007), the LMS-1 and LMS-2 Projects in 2011 and 2012, the Lake Minnetonka Nautical Archaeology 1, 2, 3, and 4 Projects (LMNA-1, LMNA-2, LMNA-3, LMNA-4, 2012-2015), and the Minnesota Dugout Canoe Project (MDC, 2013-2014). In June 2007, a walking survey of Big Island defined the surviving archaeological remains and foundations of the Big Island Amusement Park, as well as sections of the Veterans Camp. A brief underwater survey using SCUBA of the steamboat pier remains occurred as well (Merriman and Olson 2007).

Prior to the beginning of the LMS-1 Project, there were six known wrecks in Lake Minnetonka and acknowledged by the State of Minnesota – *Como*, *George/Excelsior*, *Hercules*, *Hopkins/Minnetonka*, *Minneapolis*, and the *White Bear*. However, through hearsay it was widely known that divers and fishermen knew of other wrecks in the Lower Lake. Of these six wrecks, only *White Bear* had been given a site number (21-HE-281). In late September 2011, the LMS-1 Project began in Gideon Bay on Lower Lake Minnetonka, traveling in an east to west direction, 'mowing the lawn' in transects spaced up to between 150-250 feet apart, creating a survey area of 300-500 feet per transect. Throughout the survey, some areas were targeted for further review and the beams would be shortened to 50 feet wide and often restricted to one side of the boat to get better images. In September, the LMS-1 Project encompassed Gideon Bay, Excelsior Bay, St. Albans Bay, and to a line north of Excelsior Bay and south of Gale Island extending from Tonka Bay to Greenwood. This line was chosen to include the known wreck *Minneapolis* in the survey area in order to get precise GPS coordinates of the site. Another section of the Lower Lake that comprised an area east of Big Island from Point Charming to Ferguson Point and north along the shoreline – and including Carson Bay, St. Louis Bay, and Robinson Bay to the mouth of Wayzata Bay – were also surveyed in September. In mid-November 2011, the Upper Lake's Crystal Bay and the remaining portions of the Lower Lake were surveyed during the LMS-1 Project; the survey was completed as the ice was coming in, and some bays were already iced-over. Upon the completion of the fieldwork portion of the LMS-1 Project, the required paperwork was completed to have the remaining five known wrecks recognized as nautical archaeological sites. Further, based on the Big Island maritime and terrestrial archaeology project MHM conducted in 2007 on Big Island mentioned above – combined with the sonar survey of Big Island Bay in 2011 – the Big Island Steamboat Pier, Park, and Veteran's

Camp became a recognized archaeological site. Lastly, during the LMS-1 Project three new wreck sites were identified in Lower Lake Minnetonka that received site numbers as well, and it was determined 75 anomalies appeared to be human-made objects that warranted further investigation by SCUBA (Merriman and Olson 2012a).

The LMS-2 Project was completed in May and early June 2012, beginning in the the Upper Lake's North Arm, 'mowing the lawn' in the survey boat in parallel transects spaced 500 feet apart, with the sonar's transducer sending out acoustical waves 250 feet on each side of the boat. Next came Halsted Bay, Cooks Bay, Priests Bay, the northern section of the West Upper Lake, Harrison Bay, a portion of the West Arm, Stubbs Bay, Maxwell Bay, the rest of the West Arm, Jennings Bay, the southern portion of the West Upper Lake, Phelps Bay, Spring Park Bay, the South Upper Lake, Smithtown Bay, Carman Bay, and Old Channel Bay. Throughout the LMS-1 and LMS-2 surveys, MHM relied upon the GPS maps linked into the sonar unit for water depth and navigation, as well as the extensive navigation buoy system put in place by Hennepin County. It was determined that 54 anomalies recorded through side and down imaging sonar appeared to be human-made objects that warranted further investigation by SCUBA. Lake Minnetonka was the first body of water within Minnesota completely surveyed using remote sensing archaeological techniques (Merriman and Olson 2012b). The sonar footage from the LMS-1 and LMS-2 Projects was reviewed after the surveys to determine targets for future investigation.

The LMNA-1 Project began in October 2012 and continued the following Spring, with field work ending in July 2013. This project was designed to determine the nature of specific anomalies and newly-recognized nautical archaeological sites – wrecks – located during the LMS-1 and LMS-2 Projects. The LMNA-1 Project was designed to investigate (using SCUBA) a list of 22 targets – potential nautical or underwater archaeological sites – and wreck sites located during the LMS-1 and 2 Projects. The list was determined from an analysis of sites and anomalies that were deemed had the potential to produce the most historically and archaeologically significant data, that could answer the most questions, and that may be in danger from looting. The methodology used to identify and rudimentarily document underwater archaeological anomalies is straightforward but logistically complicated. The GPS coordinates of a wreck or anomaly, data produced during the LMS-1 and 2 projects, to drop a weighted diver down buoy near the target. Then the dive boat anchored a safe distance away from the buoy and divers geared up for the dive. At any given time there were between two and six divers underwater. If the buoy anchor weight – four pounds of dive weights – landed near and sometimes on the anomaly or wreck, no search for the target was conducted. However, for a variety of reasons, a brief search for the target was conducted until it was located or it was determined that the anomaly was a geological formation or vegetation. If a cultural resource was located, the divers photographed and recorded video of the site and then its basic measurements were recorded. Using data accumulated from the fieldwork as a starting point, maritime historical research placed known and newly recognized nautical and maritime archaeological sites in their contexts and in some cases, established identifications and disposition (sinking) dates. Minnesota Archaeological Site Forms were filed with the Office of the State Archaeologist (OSA) when appropriate. This approach was successfully repeated during the LMNA-2, LMNA-3, and LMNA-4 Projects (Merriman and Olson 2013a-b, 2014b, 2015).

After the completion of the LMNA-1 Project, another review of the over 30 hours of sonar footage that was recorded during the LMS-1 and LMS-2 Projects began. This process is on-going as continued diving on targets has revealed what types of acoustical signatures different submerged cultural resources have in comparison to naturally-occurring objects such as rocks and vegetation. As a result, more wrecks and other sites have been identified. At the time of writing, over 600 anomalies have been recognized on the bottom of Lake Minnetonka, with sonar footage review still on-going. A database of identified Lake Minnetonka archaeological sites and potential sites, their basic components, vital statistics, and location is maintained and updated when necessary. Beyond these field projects, the MDC Project identified the oldest Lake Minnetonka property that had been removed from the lake in 1934 (Merriman and Olson 2014a).

## EVALUATION METHODS

The determination of NRHP nomination status for known and unknown Lake Minnetonka wrecks and maritime sites begins with the property's primary construction material. This attribute - wood, metal, or fiberglass - provides a starting point by which the design and details about each property can be further evaluated. Construction attributes that must be used to determine a wreck's design: bow and stern configuration, hull construction technique, and the presence or absence of keels, frames, cockpits, foredecks, cabins, thwarts, and consoles. Once a wreck's hull composition has been ascertained, the watercraft's type of propulsion must be determined: unpowered, steam boiler and engine, or inboards, outboards, and inboard/outboards powered by gasoline, naphtha or diesel. These basic details of construction and propulsion are then further defined by the design of a watercraft that includes the physical placement of the power source, cockpits, and other components within the hull: runabout, utility, racing boat, launch, and passenger boat, for example.

After construction material and design determination, the context of a property would be taken into consideration to determine any level of disturbance or if a wreck had been moved from its original location. Extremely poor condition of a wreck to the point that nearly all the construction attributes are missing and/or the movement of a property would negate its inclusion on the NRHP. Lake Minnetonka properties often have physical integrity because the cold fresh water of the lake provides an ideal environment for the preservation of wood, metal, and fiberglass. For NRHP consideration, however, even superior physical integrity of submerged cultural resources must be supported with solid research to determine the archaeological and historical significance of a Lake Minnetonka property under the established Criteria A-D.

Some wrecks should be considered for NRHP inclusion singly and others could be grouped together into a multiple property submission. For example, the Wayzata Bay Wreck qualifies for NRHP inclusion under Criteria C and D as a single property. To contrast, the St. Albans Bay Wreck, *Priscilla*, the Hoper Barge Wrecks, *Minneapolis*, and *Saucy Kate* could be considered under Criteria B, C, and D because of their association with Captain John R. Johnson as a multiple property submission. Other group that could be considered for a multiple property submission under Criteria B, C, and D would be the *Como*, *Hopkins/Minnetonka*, *White Bear*, *Hercules*, *Minneapolis*, and *George/Excelsior* as properties of the Twin City Rapid Transit Company; or the Streetcar boats *Como*, *Hopkins/Minnetonka*, and *White Bear* because they were designed and constructed by Royal Moore in Wayzata. As further wrecks or sites are identified, additional multiple property submissions are possible due to the number of local boatwrights working on Lake Minnetonka in the late 19<sup>th</sup> and early 20<sup>th</sup> Centuries and the role that these companies played in the area's history. Wrecks or sites that were not constructed locally may also meet NRHP nomination standards depending on their type, construction attributes, physical integrity, rarity, ownership, and history on the lake.

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Name of multiple listing (if applicable)

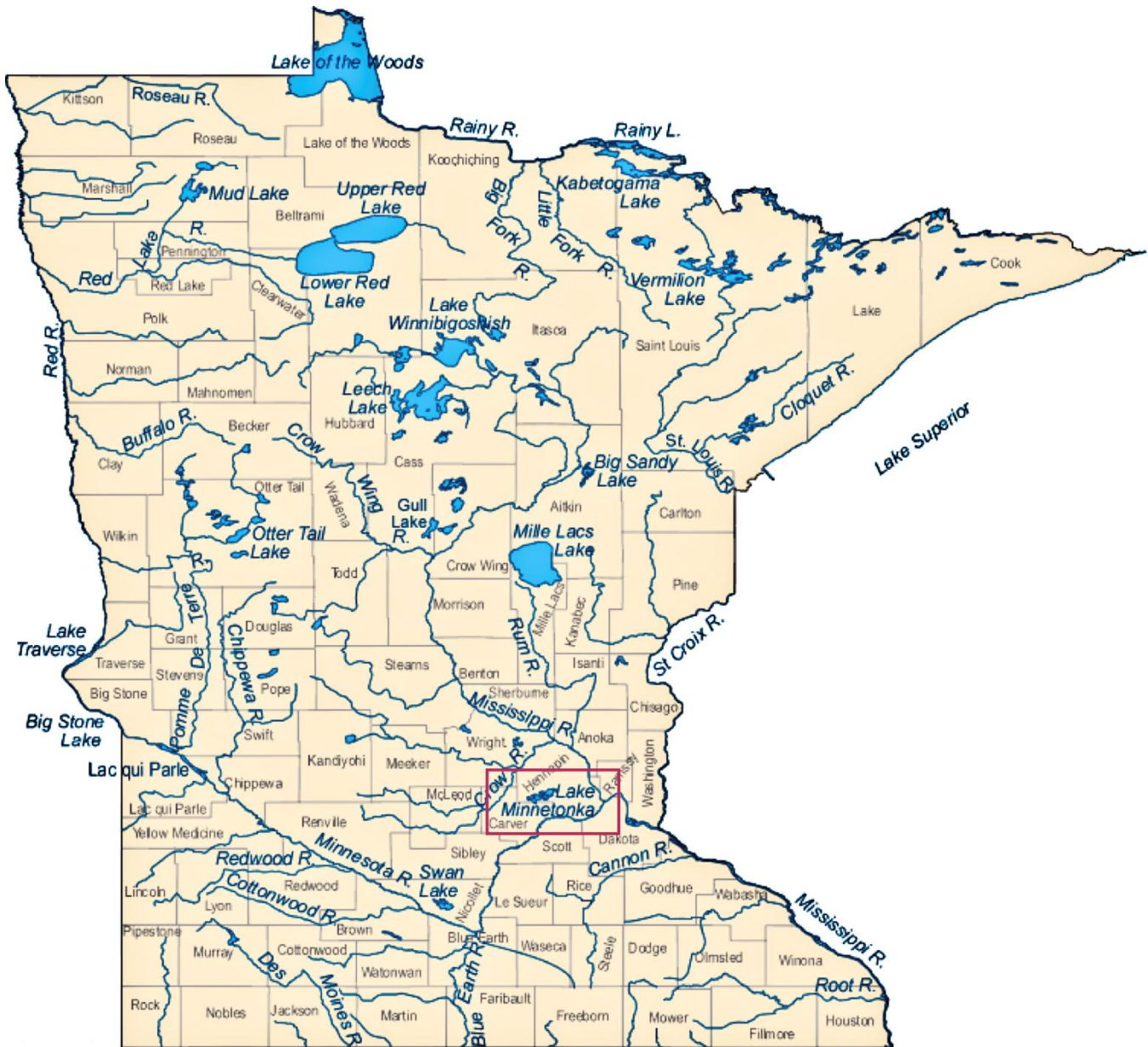


Figure 1. A map of Minnesota with Lake Minnetonka outlined in Hennepin and Carver Counties.



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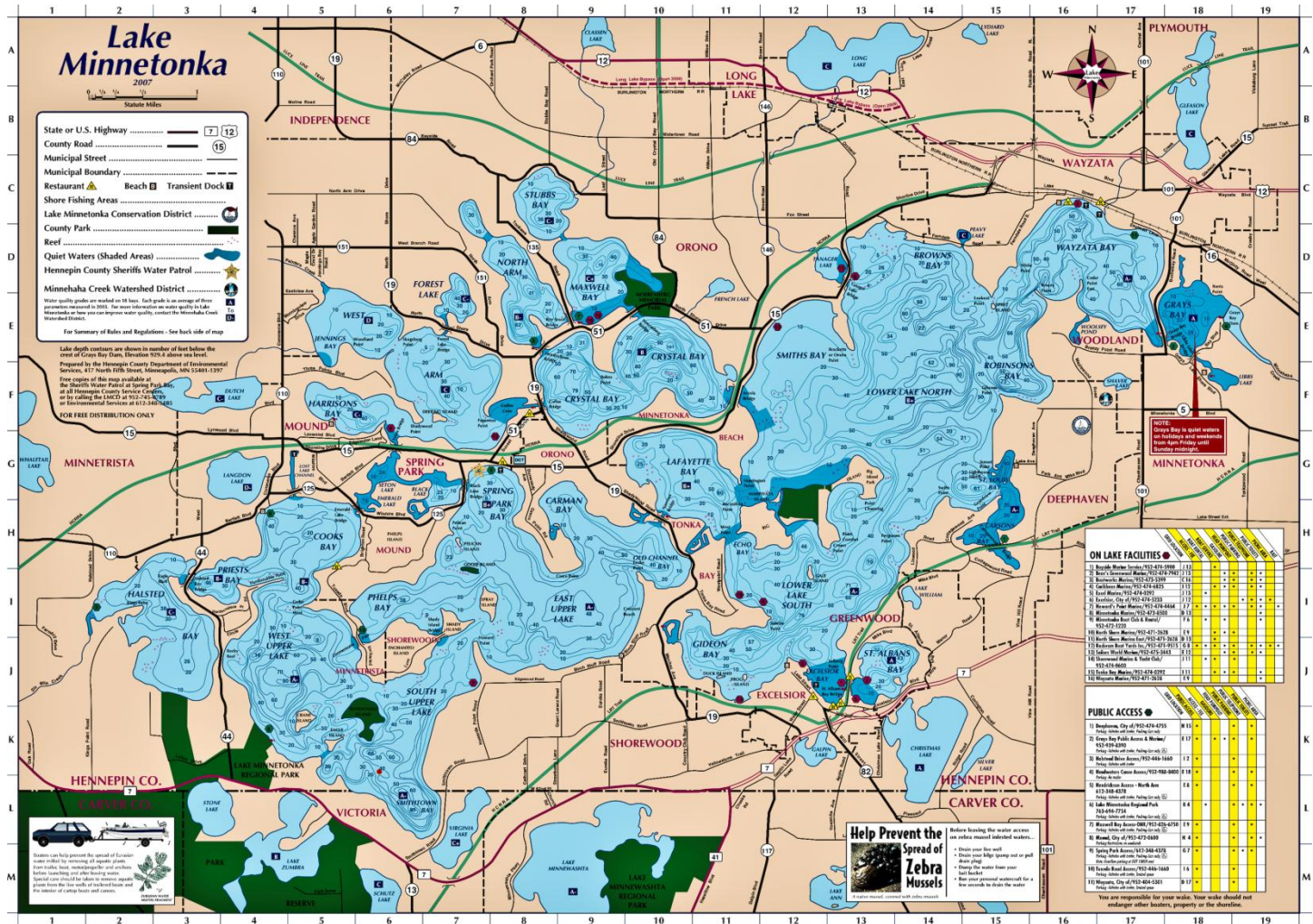


Figure 2. A map of Lake Minnetonka naming its bays and communities (Lake Minnetonka Conservation District).

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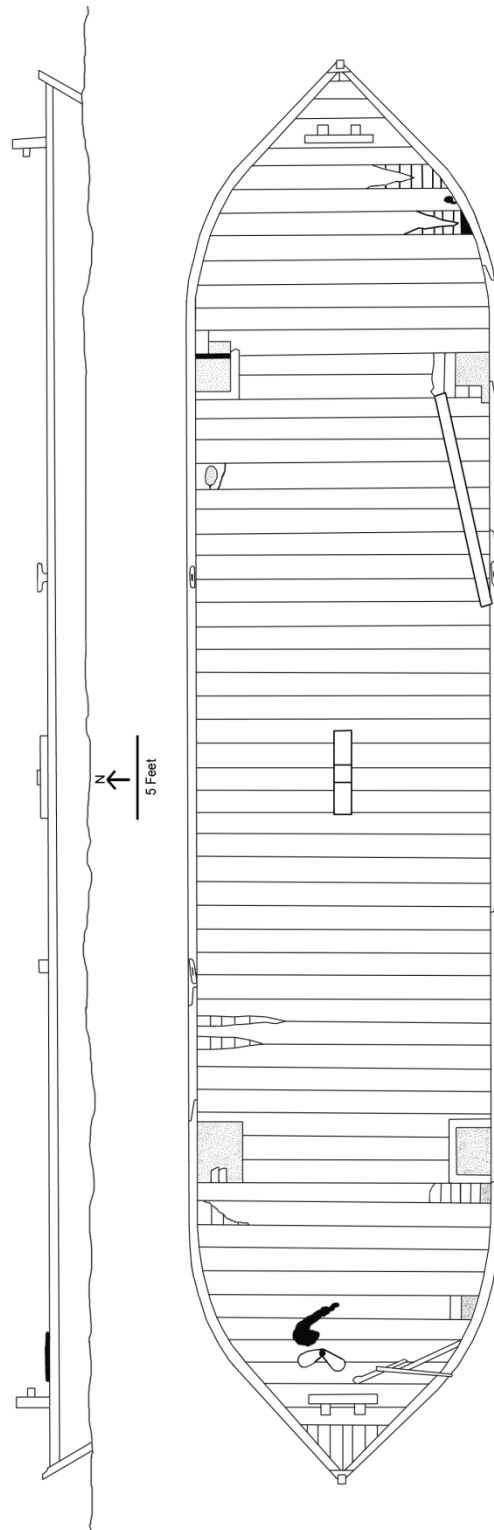


Figure 3. A profile and plan view of the Wayzata Bay Wreck (21-HE-401), the only complete model barge wreck in the United States.

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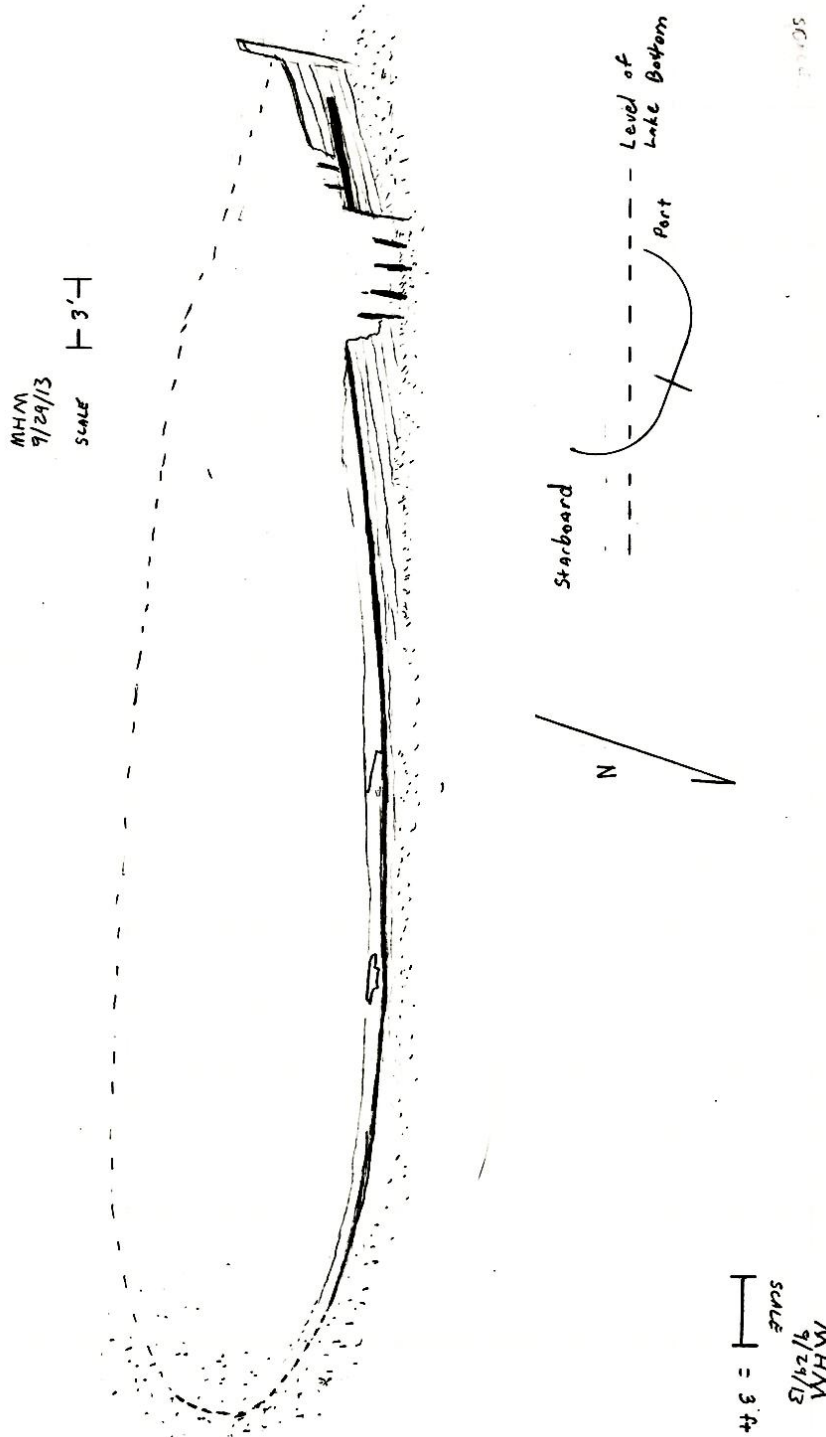


Figure 4. A sketch of the Saucy Kate Wreck, a propeller launch.



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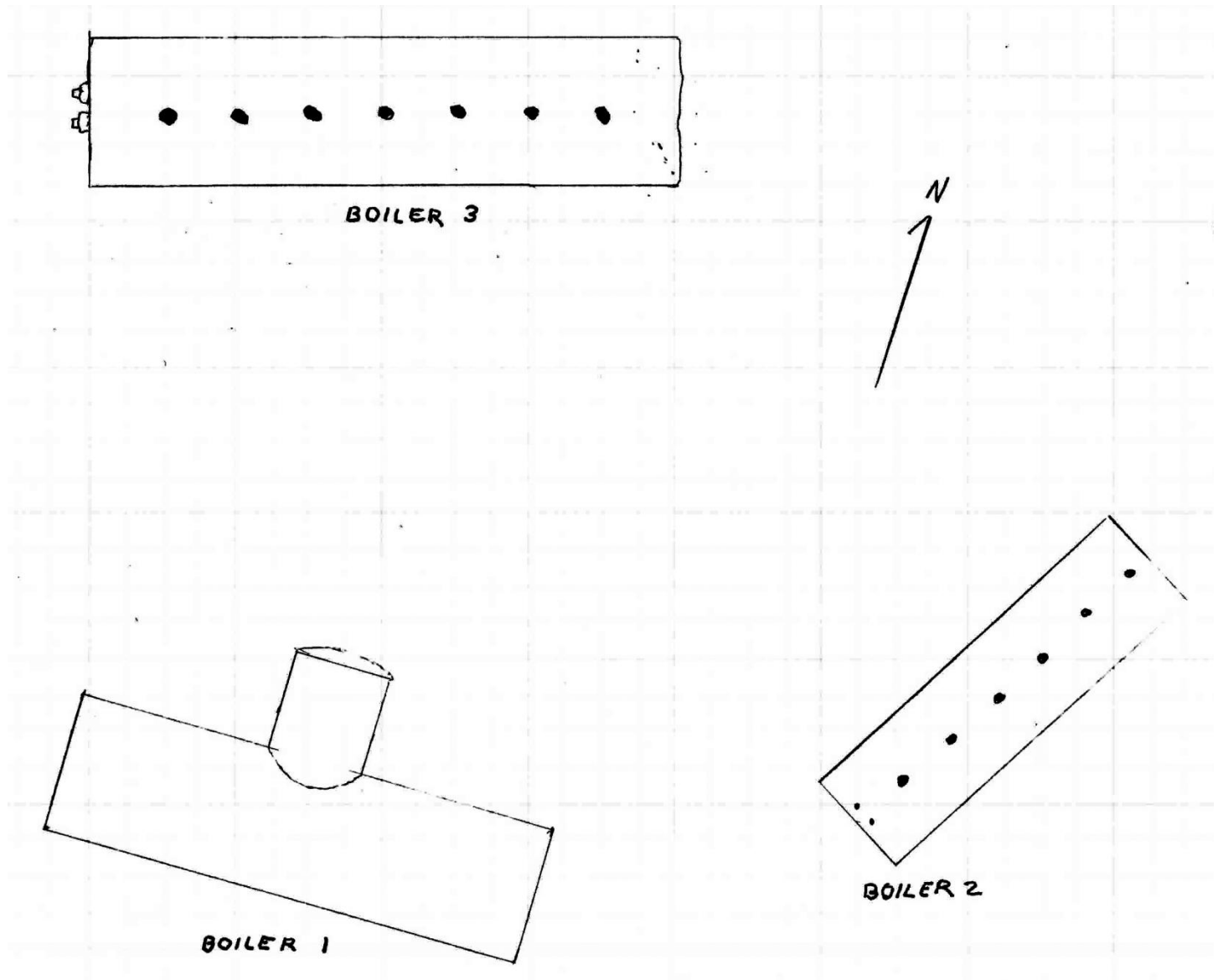


Figure 5. A sketch of the Marine Launch Boilers maritime archaeological site (21-HE-421).

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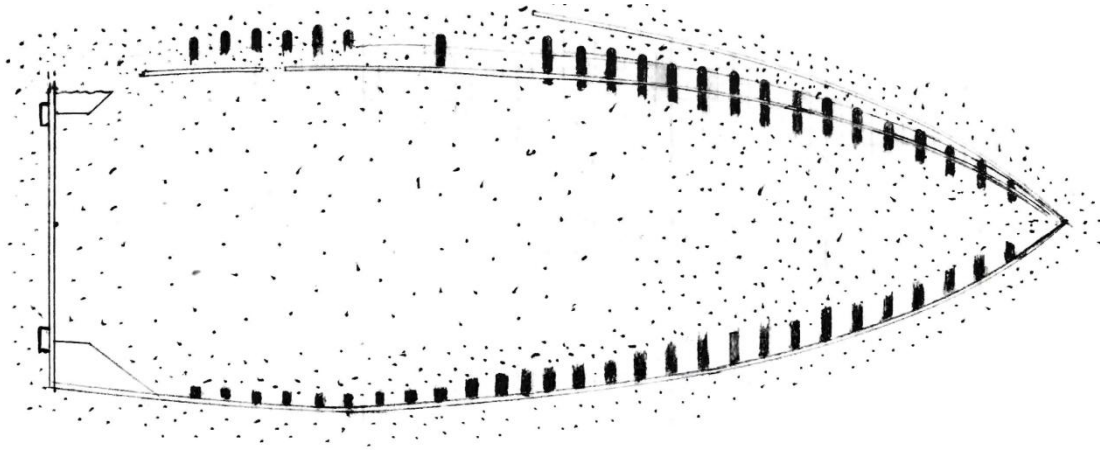
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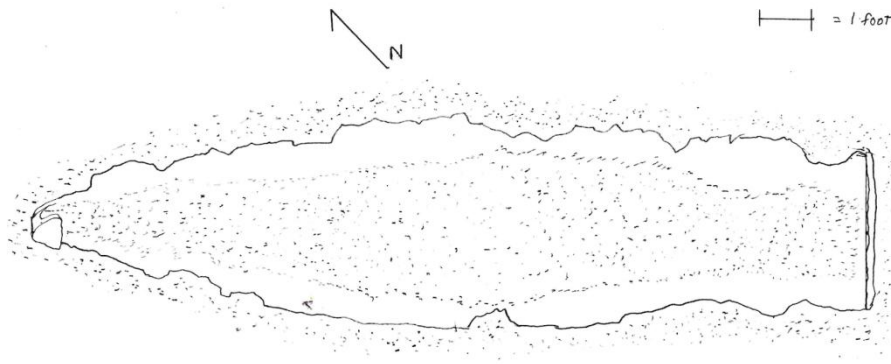
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A sketch of the Crystal Bay Rowboat Wreck (21-HE-457).



A sketch of the Maxwell Bay Rowboat Wreck (21-HE-469).



A sketch of the Gideon Bay Wreck (21-HE-415).

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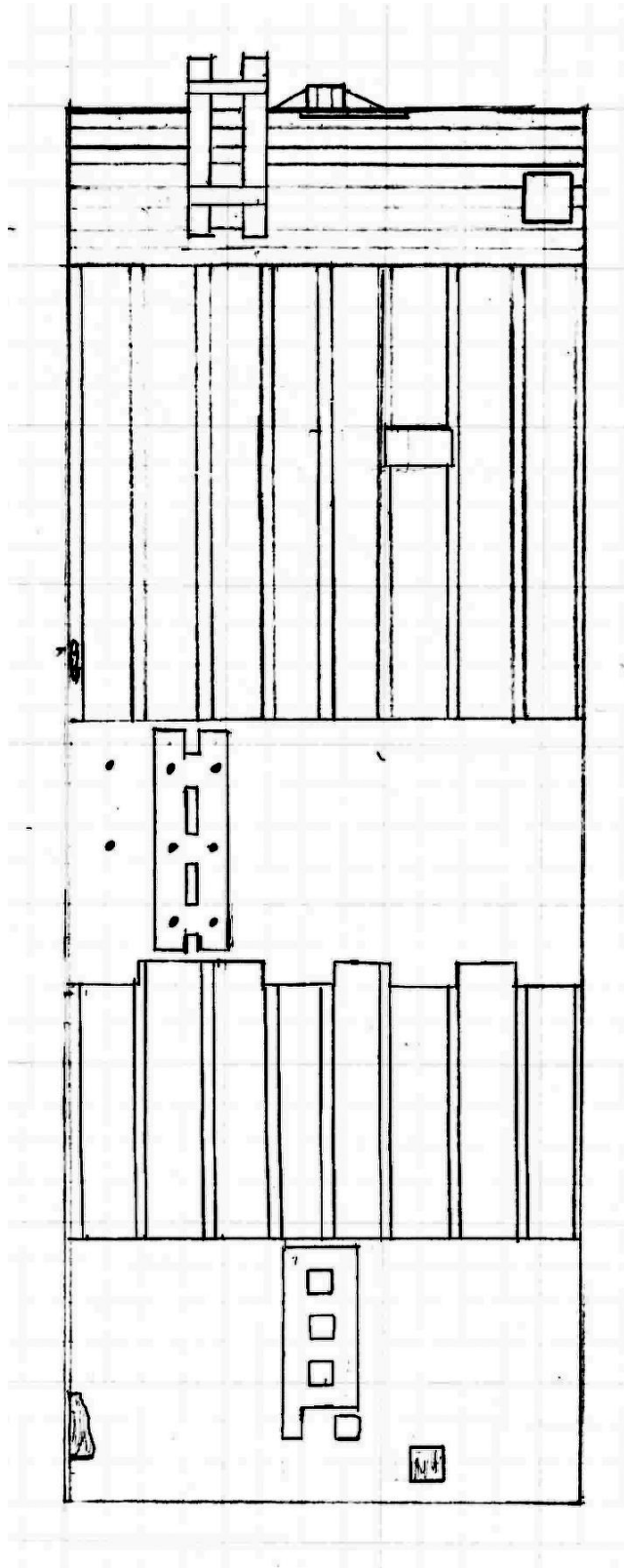
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The St. Albans Bay Wreck, a piledriver/dredge (21-HE-400).

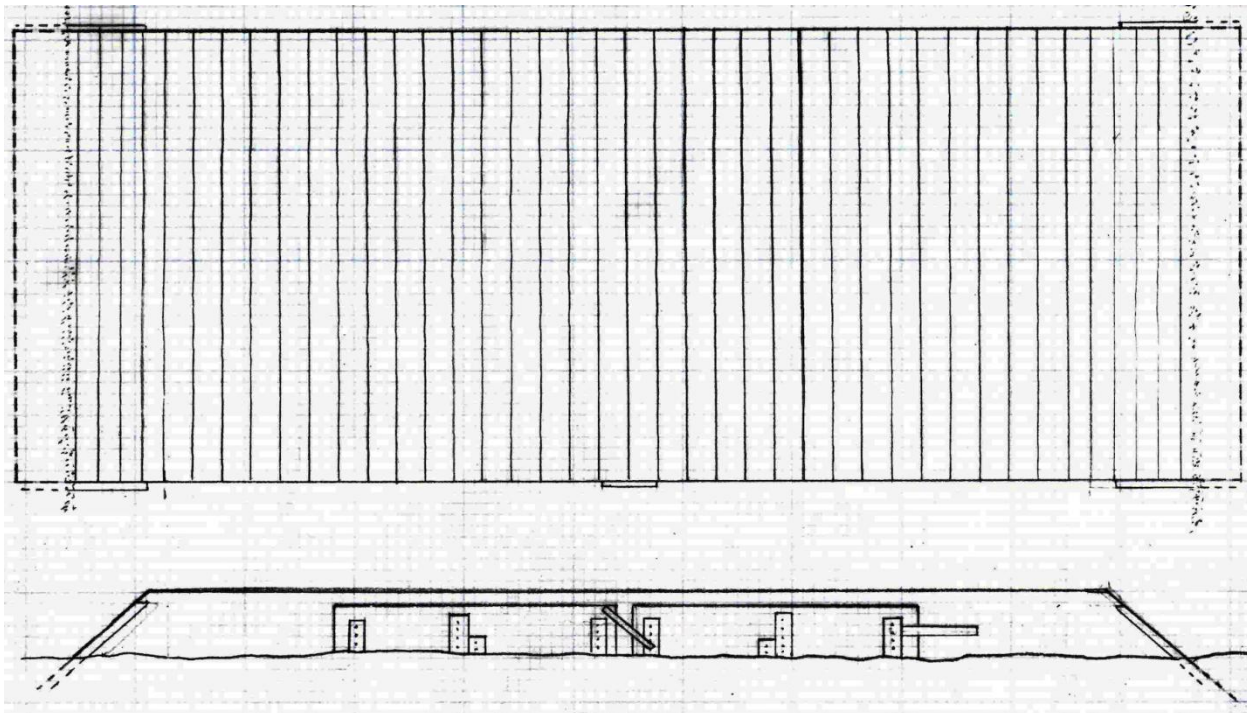
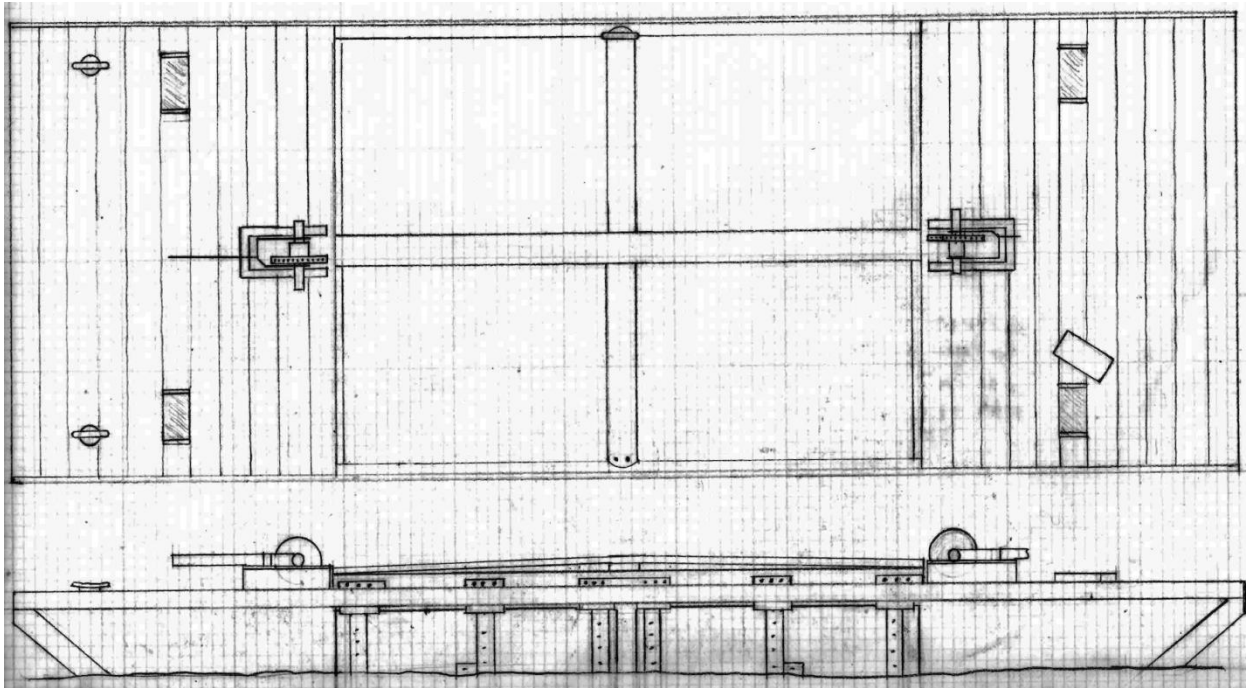
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The Hopper Barge Wrecks (21-HE-441). One of the sisters is upright and the other is capsized.

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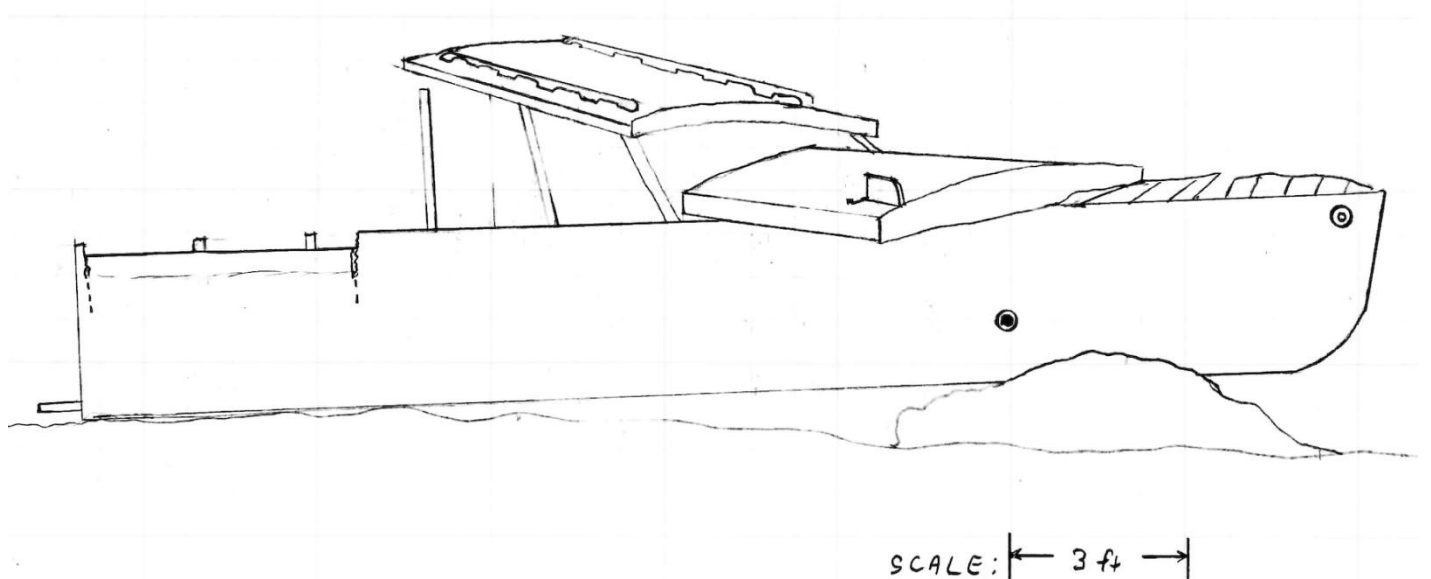
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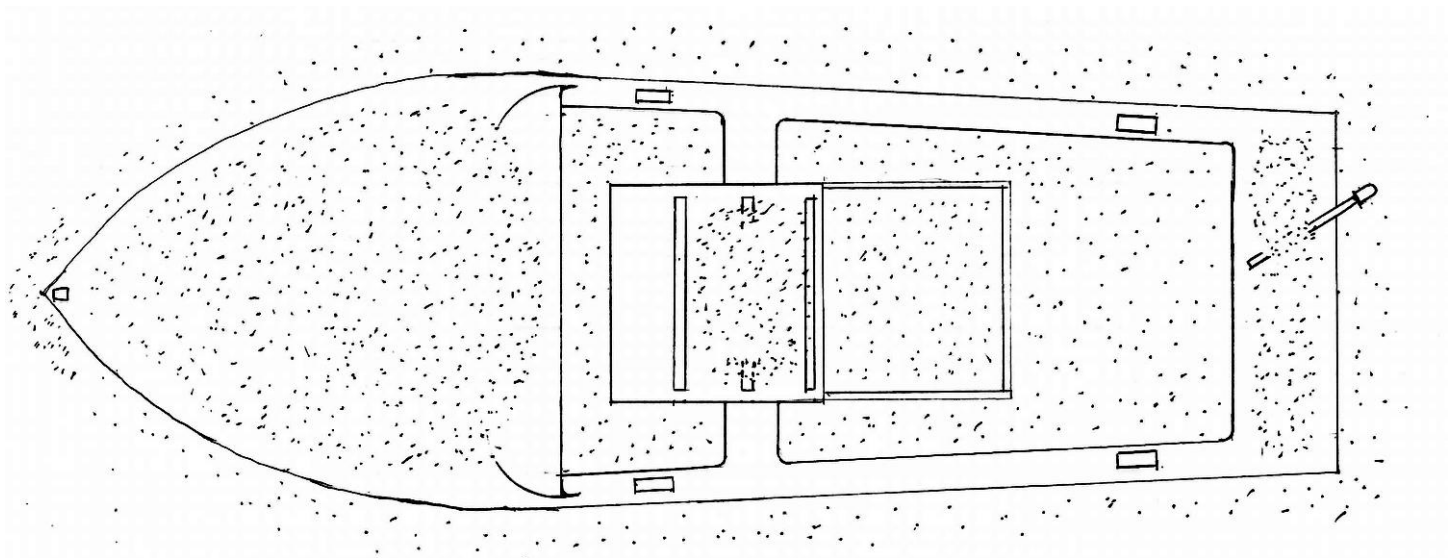
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A sketch of the Wooden Trunk Cabin Cruiser Wreck (21-HE-446).



The Correct Craft Utility Wreck (21-HE-467).